DOCUMENT RESUME

ED 197 322 CS 005 859

AUTHOR	Beck, Isabel L.; And Others
TITLE	Instructional Dimensions that May Affect Reading Comprehension: Examples from Two Commercial Reading Programs.
INSTITUTION	Pittsburgh Univ., Pa. Learning Research and Development Center.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
REPORT NO	LRDC-1979/20
PUB DATE	79
NOTE	143p.; Small print may be marginally legible.
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	*Basal Reading; *Content Analysis; Directed Reading Activity; Elementary Education; Questioning Techniques; *Reading Comprehension; *Reading Instruction; Reading Programs; Reading Research; Teaching Methods; *Textbook Content; Textbook Evaluation; Textbook Research; Vocabulary Development
IDENTIFIERS	*Ginn Reading 720 Series; *Houghton Mifflin Reading Series

ABSTRACT

Two of the most widely used reading programs in the country, the 1976 Houghton Mifflin Reading Series and the 1976 Ginn Reading 720 Series, are analyzed in this volume to determine the methods they suggest for teaching reading comprehension. Eight sections contain the following information: (1) a short description of some of the surface features of the texts of both programs, (2) the problematic aspects of the textual material offered during the first half of first grade, (3) an examination of pictures in the text in the early grades and a discussion of characteristics that may promote or inhibit comprehension of an accompanying text, (4) an examination of the previous knowledge assumed by the texts in later primary and intermediate grade materials, (5) instruction provided for developing vocabulary use, (6) a discussion of the traditional prereading element called setting a purpose for reading, (7) an examination of aspects of the story lesson divisions, and (8) a consideration of questions asked after each reading unit in the primary grades and after the entire selection at all grade levels. A summary of the analysis is provided. (MKM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED197322

1979/20

INSTRUCTIONAL DIMENSIONS THAT MAY AFFECT READING COMPREHENSION: EXAMPLES FROM TWO COMMERCIAL READING PROGRAMS

Isabel L. Beck, Margaret G. McKeown,
Ellen S. McCaslin, and Ann M. Burkes

Learning Research and Development Center

University of Pittsburgh

1979

The preparation of this paper was supported by the Learning Research and Development Center, supported in part as a research and development center by funds from the National Institute of Education (NIE), United States Department of Health, Education, and Welfare. The opinions expressed do not necessarily reflect the position or policy of NIE, and no official endorsement should be inferred. The authors are grateful to Sandy Law, who typed the draft manuscript and carefully compiled the references.

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

FEB 2 3 1981

CS005859

TABLE OF CONTENTS

INTRODUCTION 1

SURFACE DESCRIPTORS OF THE TEXTS 9
    Characteristics of the Earliest Textual Materials 9
    Characteristics of Later Primary and Intermediate Level Textual Materials 13

PROBLEMATIC ASPECTS OF THE EARLIEST TEXTUAL MATERIALS 16
    Alternative Wording 18
    Omitted Elements 26
    Summary and Conclusions 30

PICTURE CHARACTERISTICS 31
    Problematic Aspects of Picture Style 32
    Problematic Aspects of Picture Content 38
    Problematic Aspects of Teacher Guidance in Relation to Pictures 45
    Summary and Conclusions 47

PREVIOUS KNOWLEDGE ASSUMED BY THE TEXTS 48
    Examples of Pre-Story Familiarization with Story Concepts 50
    Summary and Recommendations 57

VOCABULARY 59
    Levels of Vocabulary Knowledge 60
    Application to Vocabulary Instruction 62
    The Texts 62
    Vocabulary Instruction in Ginn and Houghton Mifflin 64
    Summary and Conclusions 77

SETTING THE DIRECTION FOR STORY LESSON READING 80
    Interfering Direction-Setting Activities 81
    A Framework for Identifying Good Direction-Setting Activities 87
    Summary and Recommendations 91

DIVISIONS WITHIN A STORY LESSON 92
    SRU Divisions: A Potentially Confounding Variable 94
    SRU Reading Objective: What Function Should It Assume? 97
    Summary 101

AFTER-READING QUESTIONING 102
    A Construct for Relating Questioning to Story Comprehension: The Story Map 105

Primary Grades Questions 106
Intermediate Grades Questions 116
Summary and Conclusions 127

SUMMARY AND CONCLUSIONS 130

REFERENCE NOTES 134

REFERENCES 135

INSTRUCTIONAL DIMENSIONS THAT MAY AFFECT READING COMPREHENSION: EXAMPLES FROM TWO COMMERCIAL READING PROGRAMS

Isabel L. Beck, Margaret G. McKeown,
Ellen S. McCaslin, and Ann M. Burkes

Learning Research and Development Center
University of Pittsburgh

Introduction

In this document we discuss issues related to reading comprehension which we have identified on the basis of an examination of program materials used for reading comprehension instruction in the elementary grades. We undertook this examination with the goal of describing instruction at a level of detail which would allow us to evaluate current practices and to make suggestions for enhancing them where necessary. The many descriptions of comprehension instructional practice as presented in methods textbooks (e.g., Harris & Sipay, 1975; Spache & Spache, 1977) or in the literature (e.g., Jenkins & Pany, 1978; Popp, 1975) are too general for understanding practice beyond its surface features. Our work is aimed at a much more fine-grained description than presently exists.

In earlier work we pursued a similar level of detail in analyzing phonics instruction. We examined the actual instructional practices specified in eight commercial reading programs using existing theory, research, logical argument, and our own teaching and field experiences. The results of this detailed examination were fruitful in that we were able to offer recommendations about ingredients for beginning reading instruction that go beyond the suggestions that a "phonic-component" or "code-emphasis" approach is needed (see Beck & Block, 1979; Beck & McCaslin, 1978).

In this present work we have again applied theory, research, logical argument, and our own teaching experiences and intuitions to an examination of instructional materials. By extracting exemplars of instruction, we propose to describe practices which appear to be facilitative of comprehension and others which appear to be problematic. In general, we equate good practice with the kind of instruction that facilitates comprehension of the text at hand, although it must be noted that there is no evidence that greater comprehensibility of lessons will contribute to general reading skill. Since these reading lessons serve as reading practice, however, it seems intuitive that for practice to be effective, the practice task must be performed with some fluency. Reading instructional material that contains obstacles to comprehension is unlikely to offer fluent practice.

From this discussion it might be inferred that we recommend fairly easy material for instructional purposes. This is true to some extent, but we also recognize the appropriateness, even necessity, of more challenging instruction. Yet it must be assured that the challenges can be met by the students and that the time and effort expended in meeting the challenge yields a worthwhile learning payoff. That is, we see a difference in material that is structured to challenge a student's abilities and that which, by nature of certain inadequacies, puts the learning goal beyond a student's grasp.

Our judgments of good and poor practices will serve as a basis for empirical investigation of some of the issues we raise. We plan to work with individual children and present certain problematic lessons as they appear in the instructional materials. From protocols of children who exhibit difficulties, we will attempt to determine whether the difficulties might be attributable to aspects of the lessons which we have identified as problematic. If it is confirmed that we have indeed identified an instructional problem in a particular lesson, we will attept to alleviate it by modifying the lesson and then presenting the revised lesson to children. This report, then, is the plow work we have accomplished as we pored over two basal reading programs prior to moving into empirical work. As such, it is full of speculation and intuition, which we hope to refine as we work in more precise ways. We would not be at all surprised if, after working in the field, we will have to revise some of our initial judgments.

In describing practices which may facilitate or impede comprehension, we have in mind a target population of poor-prognosis readers. Our concern is not with those children who learn to read with great ease--in spite of how they are taught--nor with the very disabled learner. We are here considering the programs in light of children who may be considered "below average" in reading ability but who might be capable of greater success under advantageous instructional conditions.

We are using as our information base the most recent editions of the two programs which are, to the best of our knowledge, the most widely used programs in the country: the 1976 Houghton Mifflin Reading Series and the 1976 Ginn Reading 720 Series. We are able to begin our study of instructional practices through examination of basal reading programs because these commercial materials are extraordinarily central to the elementary reading curriculum. It is well documented that they are the major instructional resources used to teach reading in the elementary school (Austin & Morrison, 1963; Corder, 1971). These programs are more than series of graded storybooks; they provide total instructional systems. They supply a pedagogy for teaching reading (through the teacher's manuals), selections for children to read (through the students' readers), and practice exercises (through the workbooks). Although the implementation of programs undoubtedly varies with individual teachers, there is strong evidence that the particular program a teacher uses heavily influences his/her classroom teaching behavior (Diederich, 1973). The type of reading instruction encountered by students in a particular classroom is shaped to a great degree by the reading program being used in that classroom.

The Houghton Mifflin and Ginn programs were chosen for this study because they are widely distributed and because they are published by companies with long histories of producing materials. The Houghton Mifflin Reading Series considers itself a developmental program and provides objectives and materials for the conduct of reading instruction during the first eight grades of schooling. While the authors do not specifically provide a definition of reading, the kinds of objectives and activities they include indicate that Houghton Mifflin views reading as a multi-faceted concept. They list decoding skills, comprehension skills, reference and study skills, and literary skills as the major reading objectives aimed at the development of two main goals: "early independence in reading," and "a lively and ever-widening interest in reading" (Level B [1.1], p. I-9 TM).[1]

Like Houghton Mifflin, the Ginn Reading 720 program's view of reading is multi-faceted: "Reading is decoding . . . [it is] comprehending the author's message . . . [it is] critical evaluation . . . [it is] using ideas" (Level 5 [1.2], p. T8 TM). The Ginn program provides instruction for pre-primer through sixth-grade levels and includes seven strands or categories of instruction. Four of the seven, i.e., study skills, creativity, language, and literature, are labeled "application/enrichment" strands. Decoding, comprehension, and vocabulary are the three "core" strands.

---

[1] Throughout this paper we will cite material from the programs in the following form: If the citation is from a particular story, its title will appear first; next follows the program's designation for the book cited, "Level ____"; a bracketed number then follows to indicate the grade equivalent of the book (if the material for a grade spans more than one book, a second number indicates if materials is appropriate to the first [.1] or second [.2] half of the grade level); next for citations from a specific page, the page number is followed by TM--Teacher's Manual, or PR--Pupil's Reader.

Thus, the programs we have selected exhibit similarly broad orientations to reading which include decoding, literal and inferential comprehension, and enrichment skills. In addition, both Houghton Mifflin and Ginn emphasize stories presented in the traditionally structured directed reading lesson to fulfill their major objectives. The structure of a directed reading lesson is at least as old as the McGuffy Readers; it is discussed in the methods textbooks used for the training of pre-service teachers and is easily extracted from the lesson plans of reading programs. As shown in Figure 1, there are four steps in the directed reading lesson.

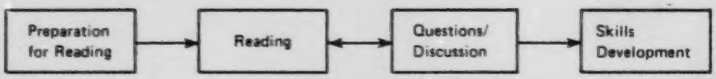


Figure 1. Components of a directed reading lesson.

Preparation for Reading (Box 1) usually includes some background information to help with concepts included in the text, a vocabulary element which provides instruction in the pronunciation and/or meaning of new words, and an introduction to the selection designated as "purpose" for reading by the programs. Typically, this last element directs the children to "read to find out" something in the text.

The children then turn to their readers for the silent reading of the assigned pages (Box 2). In the primary grades, the stories are divided into a number of smaller reading units. Before each portion is read, the teacher poses one or more questions specific to the content of that portion of the text. In the intermediate grades, students usually read the entire story silently without interruption.

After reading, the teacher questions students on what has been read (Box 3). Different types of questions occur which may require memory for discrete bits of information, synthesis, inference, or evaluation. In the primary grades, in which children read only one portion of the story at a time, questions related to each reading unit are provided. Then, at the end of the story, a second set of questions related to the entire story is presented. In the intermediate grades, since the stories are read in their entirety, post-reading questions follow the completion of the story and are meant to apply to the entire story.

After the story lesson, a fourth component (Box 4) provides instruction toward the development of specific reading skills. Skills development exercises can focus on phonic analysis, structural analysis, or what the programs consider specific comprehension skills. These latter exercises include such tasks as arranging events in sequence, separating main ideas from supporting details, and so forth.

Comprehension instruction is seen to occur through the events associated with story reading and through the completion of exercises on specific reading skills. Our work focuses on the events surrounding the story lesson, that is, the preparation, reading, and questioning components, because these components consume a major portion of the instructional time devoted to reading judged both by the amount of instructional material provided and by teachers' own reports of how they spend their reading instructional time.

In framing our analysis around the components of the directed reading lesson, we set forth our view that this traditional lesson format is an appropriate framework for guiding comprehension.

Yet, our examination of the preparation, reading, and questioning components of randomly selected directed reading lessons found wide variability in the effectiveness with which these components were used to promote comprehension. Our examination of the lessons led us to identify a number of issues within the lesson components that may play a role in comprehension of the text at hand. In discussing the issues we have identified, we will present examples of instruction that we see as facilitative or problematic for comprehension. Here we stress that the discussion of problematic aspects is not to be taken as an evaluation of either the Houghton Mifflin or Ginn program as a whole. We do not know whether such problematic aspects occur 5% of the time or 50% of the time--though we do know they are not unique instances. We have not attempted to quantify the extent of problematic aspects. Rather, at this stage of our work, we are concerned with identifying the issues.

It should be noted that in presenting our examples, we tended to limit ourselves to one example of a given problem or situation rather than including examples from each program which pertain to the same point. This should not be taken as an indication that a given situation occurs only in the program from which the example is drawn. The examples represent situations which occur in both programs unless otherwise indicated in our discussions.

Each of the following sections is devoted to an examination of one of the issues we have identified as potentially important in terms of its effect on comprehension of the text at hand.

The first section, Surface Descriptors of the Texts, is a short description of some of the surface features of the texts of both programs; it serves to provide a background in which to view the later, more qualitative discussions.

The second section, Problematic Aspects of the Earliest Textual Materials, focuses on the materials children encounter in the very beginning of reading instruction, i.e., during the first half of first grade. Here we consider the difficulties in communicating meaning through print which arise from the limited reading vocabulary children possess at this level.

The third section, Picture Characteristics, examines pictures included in the text in the early grades. Our concern with pictures is not their general effect on word recognition, but rather the characteristics of pictures which may promote or inhibit comprehension of an accompanying text.

Our fourth section, Previous Knowledge Assumed by the Texts, moves into the later primary and intermediate grades materials. The earliest textual materials assume little previous knowledge beyond everyday experience, but later texts increasingly deal with concepts that may be unfamiliar to many children. In this section we explore the positive and negative potential of this greater conceptual load.

The area covered by the fifth section, Vocabulary, is closely tied to the knowledge domain discussed in our fourth section. The emphasis in this section, however, is on single words rather than networks of ideas as is the case in our examination of previous knowledge. In this section we look at the instruction provided for moving new words into children's vocabulary repertoires.

The sixth section, Setting the Direction for Story Lesson Reading, examines a traditional pre-reading element designated by the programs as "setting a purpose for reading." We discuss direction-setting activities which may interfere with or which may facilitate comprehension of a text.

The seventh section, Divisions Within a Story Lesson, examines aspects of the story lesson related to the smaller reading units into which stories in the primary grades are divided. We first look at where the divisions between the units fall and the possible effect on the flow of the story. We then examine the teacher guidance which precedes the reading of the smaller reading units.

The eighth and final section, After-Reading Questioning, is devoted to an examination of questions asked after each reading unit in the primary grades and questions asked after the entire selection at all grade levels. Here we propose functions for questions that would, in our view, best promote comprehension, and we examine questions provided by the programs in terms of these functions.

The results of our examination will enable us to make preliminary suggestions to program developers and teachers toward optimizing the effectiveness of instructional practices for comprehension and will provide direction for our empirical work.

Surface Descriptors of the Texts

In this section, we consider some characteristics of the textual materials through the primary and intermediate grades. A distinction is made between those texts of the first half of first grade, called here the earliest textual materials, and the texts that follow through the remainder of the primary and intermediate grades.

Characteristics of the Earliest Textual Materials

In accordance with traditional practice, in both the Ginn and Houghton Mifflin programs, early stories are characterized by the use of dialogue and the inclusion of pictures. These early stories are written almost entirely in dialogue. The early Houghton Mifflin stories have an unusual twist in that they are presented as plays.

Until quotation marks and the word said are introduced in the second half of first grade (Level E), all fiction stories consist entirely of character speeches with a picture of the character's head or, later, with the character's name, preceding the speeches. In the Ginn series, almost all the stories in the early levels consist entirely of dialogue constructed with quotation marks and a said phrase.

In both programs, full-color pictures dominate virtually every page of text, with the teacher's manuals usually directing the teacher to have each picture discussed prior to the reading of the page.

While the stories in the earliest levels of the Houghton Mifflin and Ginn programs are similar in terms of the extensive use of dialogue and pictures, they are quite different in terms of length and plot complexity of the texts. Before describing these differences, it is necessary to distinguish among a story, a story lesson, and a silent reading unit (SRU). A story is a complete narrative unit that appears as uninterrupted text in the pupil's book. A story lesson is the amount of text to be read in one day's reading session; therefore, a story may be composed of several story lessons. An SRU is that portion of a story lesson that the children read by themselves between periods of teacher questioning. There may be several SRU's per story lesson.

Table 1 shows the average number of words in a story, a story lesson, and an SRU for the two programs.[2] As can be seen from the table, in a typical Houghton Mifflin story lesson, children read five independent reading units of about 30 words each. For a typical Ginn story lesson, children read four independent reading units of about 23 words each.

---

[2] The sample used to collect these data consisted of every third fiction story in the first half of first grade from both Houghton Mifflin and Ginn.

Table 1

Mean Number of Words in a Story, a Story Lesson, and a Silent Reading Unit in the First Half of First Grade

Program	Story	Story Lesson	SRU
Houghton Mifflin	304	152	30
Ginn	92	92	23

Thus, the portion of text assigned for each independent reading unit is slightly larger in Hougton Mifflin than in Ginn. The portion read in one day's lesson and the amount of text that constitutes a complete story are much greater in the Houghton Mifflin program.

As would be suggested by comparative story lengths, the plot lines in Ginn are simple compared with more elaborate plot patterns in the Houghton Mifflin series. For example, one of the earliest stories in Ginn contains the following plot elements:

(1) a dog tries to chase ducks in the park; and

(2) the dog's master calls him away to save the ducks. ("Lad," Level 3 [1. 1])

In Houghton Mifflin, by contrast, one of the initial stories contains the following elements:[3]

(1) a boy wants to see tigers at the zoo;

(2) he isn't allowed to ride the bus without adult supervision, so he and his friends attempt to follow the bus to the zoo on foot;

(3) they are unable to keep up with the bus;

---

[3] The first three elements are contained in one story lesson; the fourth and fifth elements are read for the following day's lesson.

(4) they subsequently visit an improvised "zoo" at a pet store near a bus stop; and

(5) the "tigers" that the children see in this "zoo" are striped cats. ("Tigers, Here We Come," Level B [1. 1]).

The complexity of these examples of story content from approximately equivalent levels in the two programs is typical and indicates that Houghton Mifflin attempts to include much more content, in terms of concepts and of plot complications, than does Ginn.

Whereas the Ginn plot lines are skeletal, its post-reading questioning tends to be of the type that extends story discussions beyond the actual text and pictures. For example, the first page of one story consists of an illustration of a boy sitting in a tree and the following text: "Here's Bill. Bill is at the park" ("At the Park," Level 3 [1. 1], p. 7 TM). The children are asked to go beyond the given information by answering such questions as, "Do you think Bill comes to the park often?" (p. 7 TM).

In Houghton Mifflin, post-reading questions are carefully patterned after the text, with an almost one-to-one relationship existing between a line of text and a question. For example, the first line of a Houghton Mifflin story has a boy, Bob, saying: "Do you want to play with me, Ricky?" ("Fun with a Lion," Level C [1. 1], p. 243 TM). The first question provided for the text is, "What was the first thing Bob asked Ricky?" (p. 242 TM).

In summary, then, general characteristics of the earliest texts in the two programs reveal some areas in which the programs are similar and some in which they are different. Similarities between the two programs include textual presentation as dialogue and the extensive use of pictures. Differences between the two programs are found in the lengths and plot complexities of the texts and in the kinds of teacher questioning employed. The amount of uninterrupted text that children read independently, the amount of text read in one reading lesson, and the length of a complete story are greater in Houghton Mifflin than in Ginn. While Ginn stories provide less complex plot lines than do those of Houghton Mifflin, Ginn uses the text as a springboard for extension questioning; Houghton Mifflin, on the other hand, questions the events of the text on a line-by-line basis.

Characteristics of Later Primary and Intermediate Level Textual Materials

For the first half of first grade through third grade, the amount of text in the Houghton Mifflin story and story lesson remains greater than in Ginn. In addition, a great difference begins to appear for the programs in the size of the SRU. Where previously Houghton Mifflin's SRU was slightly greater than Ginn's, starting in the second half of first grade, it becomes over three times as long. Table 2 illustrates these distinctions.[4] The greater amount of uninterrupted text to be read, as identified by the longer SRU, and the greater amount of text per story lesson suggest a more demanding reading environment for the Houghton Mifflin reader at the later primary levels.

Table 2

Mean Number of Words in a Story, a Story Lesson, and a Silent Reading Unit in the Second Half of First, Second, and Third Grades

Grade	Program	Story	Story Lesson	SRU
1.2	Houghton Mifflin	1073	460	121
	Ginn	242	215	40
2	Houghton Mifflin	1683	841	374
	Ginn	536	480	95
3	Houghton Mifflin	1951	1219	887
	Ginn	947	947	237

---

[4] These data are based on a sample of every third fiction selection in both programs.

In the intermediate grades of both programs, the character of the reading lesson changes. A story lesson is no longer divided into SRU's; rather, the children read the entire day's selection silently without interruption. A questioning and discussion period follows that reading. All the intermediate level selections are designed to be completed in one day's lesson, though in Houghton Mifflin, the teacher is occasionally offered the option of dividing a story into two lessons for slower readers. Table 3, which presents the average story length for grades four through six, shows that in grade four the Houghton Mifflin selections are still longer than Ginn's, although only slightly; the grade five selections are of virtually equal length; and by sixth grade, the Ginn selections are the longer, by about one-third.[5]

Table 3

Mean Number of Words in a Story in the Intermediate Grades

Program	Grade 4	Grade 5	Grade 6
Houghton Mifflin	2643	2853	2848
Ginn	2237	2881	3779

We now take a look at one factor related to the content of the selections. The types of selections presented by both programs change as one progresses through the levels. The earliest materials are mainly fiction, with each program offering one non-fiction selection in the first half of first grade. Later, the amount of non-fiction increases. Table 4 shows the number of fiction and non-fiction selections in the second half of first through sixth grades. Though both programs increase the number of non-fiction selections beyond the earliest levels, Houghton Mifflin offers a greater proportion of non-fiction, particularly in the fourth and fifth grades.

---

[5] These data are based on a sample of every fourth fiction selection in both programs.

Table 4

Percent of Fiction and Non-Fiction Selections in the Second Half of First Through Sixth Grade

	Houghton Mifflin		Ginn	
Grade	Fiction	Non-Fiction	Fiction	Non-Fiction
1.2	81.8	18.2	87.0	13.0
2	77.5	22.5	86.9	13.1
3	75.0	25.0	78.3	21.7
4	54.3	45.7	85.7	14.3
5	66.0	34.0	85.2	14.8
6	54.5	45.5	53.3	46.7

Another distinction can be made between the intermediate levels and the primary levels in both programs. In the intermediate levels, Houghton Mifflin and Ginn show the tendency that is current in recently published reading series to use material taken from recognized children's literature for their reading selections. This tendency arose in response to criticism of the quality of selections in the older basals. Outside literature is now used by program developers in an attempt to provide more interesting and more varied reading materials. Though small amounts of outside literature are used in the primary levels, particularly by Houghton Mifflin, this becomes a much more common practice in the intermediate grades. In addition, from one-third to one-half of the selections included are excerpts from longer works. In grade four, 52% of Houghton Mifflin's selections and 30% of Ginn's are excerpts. In grade five, 58% of Houghton Mifflin's and 40% of Ginn's are excerpted, and in grade six, excerpts account for 41% of the Houghton Mifflin selections and 50% of Ginn's. The prevalence of outside literature will be important in later discussions as we look at consequences that result from its use as basic instructional material.

In summary, the trend started in the first half of first grade in which the Houghton Mifflin stories, story lessons, and SRU's are longer than those of Ginn continues throughout the primary grades, with the disparity in the size of the SRU's becoming more pronounced. In the intermediate grades, where stories are read silently in one sitting without interruption, the average length of selections becomes more nearly equal. The number of non-fiction stories increases in both programs, with Houghton Mifflin offering more non-fiction than Ginn. In the intermediate levels of both programs, selections are often taken from outside literature and many of these selections are excerpted from longer works.

Problematic Aspects of the Earliest Textual Materials

In the previous section, we presented some characteristics of the texts of both programs, distinguishing between the texts of the selections for the first half of first grade and those of the following primary and intermediate grades. That distinction was made in part because we believe that some unique situations occur in early first grade. In very beginning reading lessons, students are just starting to realize that meaning can be constructed from print. And although printed language comprehension probably draws upon similar cognitive processes and language abilities to those of oral language comprehension, some clues, such as stress and intonation, that assist the comprehension of oral language are absent from print. (For further discussion of this point, see Adams, 1977; Adams, Anderson, & Durkin, 1977; and Schallert, Kleiman, & Rubin, 1977.) In this respect alone, very beginning readers may be confused in their initial attempts to construct meaning from print.

However, another aspect in the very beginning texts may further compound the problem for beginning readers of constructing meaning. Program developers of initial reading materials must of necessity work within a severely restricted vocabulary pool to create textual materials since young readers can recognize so few words in print. If the absence of extra-linguistic clues in written language can ambiguate the meaning-getting process, then the severe vocabulary restrictions of early materials can even further ambiguate a message. The point here is that vocabulary limitations imposed upon the earliest texts often preclude the most direct way of conveying information.

When the very words needed to convey information required for textual development are not available, program developers either substitute "simpler" words to approximate the intended meaning, or they omit the information entirely. When alternative words are used, the originally intended meaning is often not apparent in the resulting text. When information is omitted, the printed text is insufficient to convey meaning.

Therefore, to a large extent, the printed texts of the earliest reading materials are not in themselves complete stories or even complete messages. To compensate for the incomplete nature of the early texts, program developers must rely on the accompanying pictures and information provided by the teacher or elicited from the children during discussion/questioning periods to carry the story content not available in printed form.

In this section, we examine specific examples in which vocabulary restrictions require either alternative wording or omissions of information; we will discuss the effectiveness of the two programs in compensating for the limited texts. First we will examine two types of alternative wording: roundabout language, used to approximate the notion of an unavailable word; and referring expressions, such as this, that, he, she, used to directly replace a word or phrase. Then we will examine instances of omissions of information that result in elliptical passages of text or entire elliptical stories.

Alternative Wording

Roundabout language. We present here two instances in which words needed to convey a concept central to the story are unavailable, and the idea is conveyed in a roundabout way. In the first example, we believe that the teacher intervenes successfully to provide clarification. In the second example, the intervention seems much less likely to clarify an important point of the story.

In the Ginn program, a use of roundabout language occurs in a story which attempts to recapitulate the fable of the tortoise and the hare ("Rabbit and Turtle," Level 3 [1.1]). The account of the race between the two animals never uses the word race. In the text, the turtle simply says, "See the park. You and I will run. We'll run to the park" (p. 117 TM). These lines are meant to indicate that the turtle is challenging the rabbit to a race. The teacher's manual helps the children to be aware of this, for the teacher is directed:

> Ask what Turtle meant by saying, "We'll run to the park." If the idea of a race is not mentioned, suggest it. Help the children realize that Turtle was challenging Rabbit to a race. (p. 117 TM)

Another instance of roundabout language occurs because of the unavailability of the word sleep. When the rabbit wants to go to sleep by the side of the road, he says, "I want to stop. I'll stop here" (p. 117 TM), and the picture depicts him lying in the grass with the cartoon symbol for sleep--a line of z's--above his head. The teacher helps the children to understand that the rabbit is sleeping via the purpose given for reading the page; the manual directs:

> Focus attention on the picture. When the children discover that Rabbit is asleep, ask them to read to find out why Rabbit stopped to take a nap. (p. 117 TM)

Although the text in the above example is in itself quite problematic, the strategies suggested in the manual appear likely to disambiguate the roundabout language caused by limited vocabulary.

Now we will look at the example in which the techniques to compensate for unavailable words seem less effective. The story is about a lion with a toothache who visits a dentist (Houghton Mifflin, "No Lions and Tigers," Level C [1.1]). The words toothache and dentist are unavailable, so the program attempts to convey these concepts in various other ways.

The first clue to the lion's problem occurs on the title page. He is pictured wearing a red bandana around his head. This represents the stereotypical toothache bandage. The teacher calls the children's attention to the bandana by asking: "What does the lion have tied around its head?" (p. 188 TM). However, the purpose for wearing the bandana is not questioned, so at this point, the children must still rely upon the story for explication.

The first textual reference to the lion's problem occurs on the first page of the story. To indicate that he has a toothache, the lion says: "I'm a sick lion. And I can't smile" (p. 190 TM). We believe that this particular roundabout language, explicitly mentioning sickness, could mislead many children. Dental problems are not usually considered as sickness. Moreover, the notion of illness is reinforced by teacher intervention in the purpose for reading the next page, when the teacher mentions the lion's chances "to get better" and says: "You can find out if Lion gets better by turning [to the next page]" (p. 190 TM).

The second page of text includes another pictorial clue. A frog character is shown looking into the lion's mouth. The text also contains a clue. The frog says that "Dr. Kangaroo" can help the lion. "Dr. Kangaroo" happens to be a dentist. However, the previous mention of sickness makes it possible for children to assume that Dr. Kangaroo is a standard medical doctor.

The most salient clue occurs on the third page of the story. Teeth are specifically mentioned in the text. The frog says: "Dr. Kangaroo will look at your teeth." The lion concedes: "I do want help for my teeth. It's no fun to be sick" (p. 195 TM). However, the reference to sickness again seems to muddy the concept of toothache. It is not until after the discussion of this page is finished, when setting the purpose for reading the next page, that the teacher clarifies the lion's problem for the students by asking:

> Do you suppose Frog will be able to convince Lion that he really should go to the dentist?
> Turn to [the next page] and see if Frog gets Lion to go to the dentist. (p. 194 TM)

Thus, the children are ready to read the fourth page of the story before the nature of the lion's problem, introduced on the first page, is clarified.

Trabasso and Nicholas (in press) have noted that a reader creates a tentative model of a story as a framework for understanding the story. The model constructed by children from the first three pages of this story might likely incorporate the notion of illness as a central construct since this concept is mentioned in the text and reinforced in the teacher's comments. Trabasso and Nicholas indicate that the creation of an incorrect model can disrupt or slow processing, thus impeding comprehension.

Even if from the onset the reader correctly identified the lion's problem as a toothache, comprehension problems may possibly result since the verification of this concept is delayed until several pages of the story have been read. Trabasso and Nicholas also indicate that the postponement of verification can cause the reader to perceive a text as ambiguous.

In this example, obstacles to comprehension could be lessened if the concepts toothache and dentist were elicited through directive questioning in the beginning of the story. For example, the teacher could ask why the lion has a bandana around his head in picture discussion of the title page. After the reading of the first page, the teacher's questions could follow up the toothache notion and, when the name "Dr. Kangaroo" is introduced, the teacher could ask about persons who are given the title "Dr." With better preparation to read and better after-reading questioning, the concepts could be clarified to facilitate the translation of the roundabout language of the text.

Numerous examples were found in both programs where sensitivity to the roundabout language problem resulted in adequate mechanisms to compensate for textual limitations. Numerous examples were also found where such sensitivity was not shown and where roundabout language may possibly block comprehension.

Our objective here is not to catalog all examples of roundabout language resulting in problematic texts, but rather to demonstrate that such problems exist and can be dealt with by teacher intervention. We will not belabor the point by presenting further examples. We recommend that program developers give specific directions to the teacher to intervene to compensate for textual limitations; in this manner children can begin a story or story part prepared to make the translation from roundabout language to intended meaning.

Referring expressions. In addition to the use of roundabout language, the two programs often use referring expressions that are semantically ambiguous to replace unavailable words or phrases.

Currently, concern has been expressed about the difficulties involved for children in understanding these referring expressions or, as they are also called, deixis. Schallert, Kleiman, and Rubin (1977) cite from Weinrich (1963) four types of deictic terms that "may be a source of confusion for children learning to read" (p. 13): (a) Person deixis (occurs when passages contain first and second person pronoun substitutions of the I, you, my, your sort); (b) Time deixis (occurs when sentences contain temporal references appropriate to the framework of a story or passage, e.g., the next day); (c) Place deixis (occurs when a locational reference is made in a story or passage, e.g., here); and (d) Discourse deixis (occurs when pronouns of the third person stand for persons or pronouns such as this or them stand for things in a story or passage).

Schallert et al. indicate that person deixis is particularly likely to cause comprehension obstacles for young readers because the interpretation of terms such as you and I, readily accomplished in speech, becomes more difficult when the terms are used in printed material.

> In speech . . . "I" refers to the speaker, "you" to the listener. . . . In writing, the interpretation of deictic terms is often more complex. . . . In order to comprehend the text the reader must take into account the frameworks set by the text. (p. 14)

Schallert et al. and Adams et al. (1977) note that with person deixis the reader may have to shift perspective in order to accomodate a textual framework. Adams et al. cite as an example the sentence: "John said to Peter, 'Come over to my house tomorrow' " (p. 8). They note that this sentence might be perfectly understandable in its oral form with John talking to Peter, but could cause comprehension problems in its printed form because of the need to make translations, such as interpreting the word my to mean John's. Schallert et al. agree with the notion that young children experience difficulty in adopting views other than their own. The comprehension problems that can be caused by person deixis are particularly significant in light of the proliferation of dialogue in the early reading stories in most programs.

Adams et al. have also considered place deixis and discourse deixis, e.g., the comprehensibility of such expressions as here, there, this, and that. These investigators note that although the expressions are easily understood in conversation, when used in print the relationship to their intended referents may be incomprehensible. Similarly, Lesgold and Perfetti (1978) have studied comprehension difficulties arising from the need to interpret referring expressions that occur in print. They have found that even mature readers experience processing difficulties, indicated by the length of processing time, when the antecedent of a referring expression is obscure. In these studies, the presence of a referring expression in the text has been found to slow or disrupt comprehension because either the antecedent is not clearly associated with the referring expression or because too much text intervenes between antecedent and referring expression.

In the studies noted above, the antecedent of a referring expression was always contained somewhere in the text. However, in the two programs under analysis here, there are many instances in which the antecedent is not included at all in the text but rather is suggested by a picture. This practice of combining referring expressions with pictured antecedents is widely used by both programs as a technique for conveying concepts when words needed to present the ideas are unavailable. The ease or difficulty that the young child may experience in understanding the meaning of the text depends to a great degree upon the text/picture elements on the page and the teacher guidance provided during reading.

We not present two examples of referring expressions with pictured antecedents. We look first at an instance in which the guidance provided through discussion/questioning activities appears to clarify the pictured referent of a printed referring expression. The following example is from a Ginn story about a business executive's need to reach the airport in a hurry ("What Can I Do?", Level 4 [1. 1]). On one page of the story, the picture shows a crowded street, with the executive looking in the direction of an airport bus which people are boarding. The children are directed by the teacher to "read the page to find out if the man will take the bus" (p. 72 TM). The direction helps to prepare the children for understanding the referring words this and it in the text: "I can ride this to the airport. But it will not get me to the airport in time" (p. 72 TM). The words this and it refer to the bus in the picture. We believe that children are likely to make this connection since the last word the children hear before reading the text (bus), provides an oral antecedent in addition to the pictured antecedent for the printed referring expressions (this and it). In this case, the program has exhibited sensitivity to the potential interpretation problems that could arise from unexplicated references.

An example in which referring expressions are not clearly related to their pictured antecedents occurs in a Houghton Mifflin selection ("Real Dinosaurs," Level D [1. 1]). The first page includes two illustrations, the top one dominated by a dinosaur skeleton in a transparent dome. In this picture, the silhouettes of two children are in fron of the dome; the background includes arches and pillars. The bottom picture shows a boy sitting in what is apparently a dinosaur footprint. A sign says "Dinosaur National Monument."

The text between the pictures is printed according to the following spacing:

> How do we know what dinosaurs are like?
> We can go in here to find out.
>
> Have you seen a dinosaur like this one?
>
> There are parks with dinosaur footprints.
> You can walk where a dinosaur walked.
> The footprints are real! (p. 351 TM)

To understand this text, the children will have to infer that the word here (in line 2) represents the pictured museum and that the word this (in line 3) refers to the dinosaur skeleton in the top picture. Let us examine the guidance the program developers provide to help with these referring expressions and their pictured antecedents.

In the pre-story picture discussion, the concept of museum is evoked. However, the students are neither told specifically nor led to conclude that the top picture represents a museum. Rather, the question asked has a general information ring to it: "What kind of place do you think you would visit to see a dinosaur skeleton?" (p. 350 TM). The post-reading discussion also fails to clarify that here means the pictured museum, and it again seems oriented toward providing general information rather than clarifying the text: "What can you do at museums?" (p. 350 TM).

In the third line of text--"Have you seen a dinosaur like this one?" --the word this refers to the dinosaur skeleton in the top picture. However, children may have difficulty in understanding what is referred to by the phrase "a dinosaur like this one." One source of difficulty is the two-part illustration on the page; neither part depicts an actual dinosaur--the top portion includes a dinosaur skeleton and the bottom portion depicts a dinosaur footprint. Another problem is the layout of the text. Since the problematic sentence is positioned between the two sentences referring to the top picture and the three sentences referring to the bottom picture, children may have difficulty in establishing the picture to which the sentence, "Have you seen a dinosaur like this one?" refers. Neither picture discussion nor post-reading questions offer any clarification or help in associating this with the top picture.

At minimum, the pre-reading discussion, after establishing that dinosaur skeletons are located in museums, could mention specifically that just such a museum is pictured at the top of the page. The textual layout could be amended to include the third line of text with the upper two that refer to the top picture.

In summary, the use of referring expressions in texts adds to a child's task of gathering meaning since s/he must establish a relationship between an antecedent and the referring expression. In many instances in early textual materials, the difficulty of establishing such a relationship is increased because no printed antecedent is given and the pictured antecedent is obscure. According to Lesgold and Perfetti (1978):

> The less skilled reader may . . . be less able to comprehend discourses in which coherence depends upon indirect or inferred antecedence relationships. (p. 334)

Program developers can eliminate problems caused by referring expressions and their pictured referents by carefully including the antecedent in questions or discussion prior to reading or directly after completion of the page.

Omitted Elements

Just as the unavailability of certain words sometimes necessitates the use of words approximating a notion, so does the unavailability of certain words sometimes result in the omission of crucial information. When a connective between sentences or an entire story element is omitted, an inference must be made to fill in the missing material. Experiments by Stein and Glenn (in press) have shown that there is a developmental difference in inferencing ability between beginning readers and intermediate grade children. Younger children experience more difficulty in making causal inferences which interconnect story parts or statements than do older children. As it turns out, because of the inaccessibility of certain words, more inferences may be required in beginning reading stories than in stories at later levels. Younger children, who have the most difficulty making causal inferences, may inadvertently be required to infer to a greater degree than older children who have more highly developed ability.

In the early textual materials of both of the programs, we found two general kinds of omissions. The first, which we have labeled elliptical passages, refers to situations in which words needed to relate one sentence to another are omitted. The second condition, elliptical stories, occurs when a whole story element is omitted. We turn now to an example and some discussion of elliptical passages.

Elliptical passages. When words needed to relate one sentence to another are omitted, the resulting passage is elliptical. For example, such a problem occurs in a Houghton Mifflin story in which a boy wants a fish to take to "Fish Day," a special day at his school ("Sam's Big Fish," Level C [1.1]). The story opens with the boy, Sam, asking his mother for a fish. After dismissing the alternative of taking a picture of a fish rather than a real fish, Sam says: "I want a fish to take to school. Fish Day will be no fun for me!" (p. 141 TM). The relationship between these two sentences is unclear because the first cites a want while the second expresses the consequences that will occur if the want remains unfulfilled. The first sentence posits two potential outcomes--Sam will get a fish, or Sam will not get a fish. The second sentence is based upon one of these outcomes--that he will not get a fish. The intervening premise is missing from the text, thus obscuring the causal relationship between the two given sentences. It appears that the first sentence, the one specifying the want, moves in a positive direction, while the second sentence moves in a negative direction. Nothing in the text assists the reader in following this shift. The missing connective element linking the two sentences could be supplied in several ways, ranging from the inclusion of a clause or phrase (e.g., Without a fish) to a single word (i.e., Or): "I want a fish to take to school. [Or] Fish Day will be no fun for me."

If the word or were available, it would act as a lexical marker. The inclusion of lexical markers is one way to make connections in a text more explicit and thus more available to readers (Warren, Nicholas, & Trabasso, in press). But the point here is that such connective words are not available for use in text at this level. And the children read the page of text in which these sentences appear with no guidance in constructing the meaning of these two sentences. To make connections explicit in this case, the teacher could direct the children to read the first sentence to find out what Sam wants. S/he could then stop the children and say that the next sentence tells how Sam will feel if he doesn't get a fish. At minimum, the connection between the two sentences should be clarified after reading the page.

Elliptical stories. In the previous example, we discussed a potential comprehension problem that is limited to one incident or concept in the text. We now turn to a situation in which an entire story element is omitted. It is well documented that well-formed stories exhibit a specific structure and that readers expect this structure to form as they read (Stein & Glenn, Note 1). The structure of a story, or its "story grammar," has shown experimental validity (Stein & Glenn, in press). In "story grammar" terminology, a story is said to consist of a SETTING statement and one or more episodes. Each episode has five components: an INITIATING EVENT; an INTERNAL RESPONSE to that event which causes the formulation of a goal; an ATTEMPT by the protagonist to reach the goal; a CONSEQUENCE; and a REACTION to the consequence. Stein and Glenn (Note 1) have experimented with deleting elements from story episodes. They have found that stories conforming to their "ideal" structure are better remembered than those that violate the structure.

In both of the programs, we found examples of stories that were missing important elements. We will present only one such example here. In the Ginn series, an action is missing from a story in which two boys visit the zoo ("Who Said 'Hello'?," Level 4 [1. 1]). Before reading, children are asked to guess why the title is "Who Said 'Hello'?" and they discuss the picture, a two-page spread depicting the two boys, Ben and Bill, at the zoo. The first sentences are read to find out what Bill said to Ben"

> "Come with me, Ben.
> I want to see the zoo," said Bill.

The teacher then directs the children to read the next three sentences silently:

> Ben said, "Stop, Bill.
> Who said 'Hello'?
> Who said 'Hello' to me?" (p. 7 TM)

Nowhere in the text is it noted that anyone said "hello" to Ben. His question seems incomprehensible in light of this missing information.

The fact that someone said hello to Ben serves as an INITIATING EVENT--an "event or action which marks a change in the story environment" and evokes some "response from the protagonist" (Stein & Nezworski, 1978). In this case, Ben's response is to ask who said hello to him. Since the INITIATING EVENT itself is not given in the text or in the course of the directed reading lesson, this page may not be understood by young readers. Comprehension in this case is particularly likely to be inhibited in view of Stein and Glenn's (Note 1) finding that the absence of an INITIATING EVENT disrupts story recall.

In the story under consideration, the teacher could intervene to supply the INITIATING EVENT. The teacher could stop the children after they read Bill's dialogue and tell them that Ben has heard someone say something to him. S/he could then direct the children to read to find out what was said and how Ben reacted.

The story structure discussed by Stein and Glenn has been well documented, and the elements of a story have been identified experimentally as important to comprehension. When story elements are omitted from the text, program developers should make the teacher aware of the omission and offer suggestions to him/her to step in to provide the missing element.

Summary and Conclusions

In this section, we have discussed comprehension problems that might arise due to the severely restricted vocabulary that is of necessity present in the reading selections of the first half of first grade. These restrictions can lead to two types of problematic texts: (a) those in which the best words to describe a story concept are unavailable and are replaced by roundabout language or by referring expressions such as here and this; and (b) those in which unavailable words result in the partial or total omission of information. We cited recent theoretical work and research evidence to show that vague wording and textual omissions can inhibit comprehension.

Examples of problematic texts were presented from both programs to evaluate the mechanisms that the programs use to compensate for these problems. In some cases, the programs successfully used mechansims to maintain story coherence. Yet, in other cases, the failure to apply these mechanisms resulted in texts from which young readers may be unlikely to gather meaning.

Program developers need to heed the problematic nature of beginning reading texts. Restricted vocabulary is a necessary aspect of all early reading materials. Since this limited vocabulary is inadequate to carry well-formed story lines, we recommend that these early stories be viewed by developers as being told to children, with part of the story being related in print and the remaining elements necessary for story coherence provided by the teacher through judicious use of questions and discussion in the course of the reading lesson. The major concern here is that children be given all the elements necessary for constructing meaning. This is particularly important because reading at this early level is a new enterprise, and children need to be made aware that the reading process is directed toward constructing meaning. Each meaningful encounter with text may help children to understand that reading is a process not simply of word recognition, but of gaining ideas.

Picture Characteristics

Research on pictures in relation to reading instruction generally takes one of two directions. It may be concerned with word recognition, that is, whether children recognize a word more easily if the word is accompanied by a pictorial representation. Or the research may be concerned with the effects of pictures on children's comprehension of story texts. In this section, we consider the latter issue.

Most reading texts include pictures, particularly in the early grades. Pictures may help to clarify or reinforce story concepts. In the earliest materials, pictures may carry most of the story line.

However, the view of pictures as an aid to comprehension is not universally held. For instance, the Merrill Linguistic Reading Program (1975) excludes pictures because:

> A page that is free of illustrations also allows the reader to concentrate on the words without being distracted--a distinct advantage to beginning readers. (Level E, p. 7 TM)

Such disapprobation of pictures in relation to reading seems to stem largely from the work of Samuels (1967), who studied the effects of pictures on both word recognition and textual comprehension. In a study of comprehension, first graders who were identified through vocabulary pre-tests as "poor readers" were tested under two conditions: using texts with pictures and using texts without pictures. Samuels found that children using the latter tests fared better in reconstructing the stories than did the group using the illustrated texts.

However, the content of the pictures included in the illustrated texts in Samuels' experiment did not always coincide with that of the printed material on the story pages. And later research by Peeck (1974) indicated that pictures in agreement with a printed text improve children's comprehension but that pictures out of keeping with a printed text reduce comprehension.

Similarly, the style of the pictures--the way in which the content is depicted--has been shown to affect children's comprehension of a story. In a study by Poulsen, Kintsch, Kintsch, and Premack (in press), difficulties in comprehending picture stories were seen to stem from picture characteristics such as the inclusion of much irrelevant detail and radical shifts in perspective.

Thus, it seems that the effect of pictures on comprehension is often contingent upon the characteristics of the pictures that are used. The composition of pictures--their style and content--appears to be an important variable.

In this light, it appears that research should turn from an investigation of the effects of pictures in general and should focus instead upon isolating specific aspects of pictures--perhaps under the two broad categories of content and style--which can help or hinder comprehension.

In this section, we will discuss factors of the style and content of pictures which seem problematic for comprehension in the two programs. We will also explore an aspect of the teacher guidance specified in conjunction with picture discussion in which the teacher's statements may themselves be problematic for comprehension. All our examples are taken from stories in the first two grades since it is here that pictures are most integral to a story.

Problematic Aspects of Picture Style

We have indicated that pictures can be important in communicating ideas central to a story, particularly in the earliest levels in which only a limited vocabulary is available to carry the story lines. However, in order for pictures to be useful in assisting comprehension, children must be able to identify the important elements in pictures and they must be able to understand what is supposed to be happening in the illustrations. There is evidence that some school-aged children do not have such picture abilities.

Keir (1970), for example, indicated that children may not recognize even the most common objects in their pictured forms. Additionally, in a study by Aliotti (1970), disadvantaged children--those from ethnic minorities or lower level socioeconomic backgrounds--scored significantly lower than their more advantaged counterparts in picture recognition tasks. It seems that stylistic factors--the way pictures are drawn--may exaggerate the problems children meet in recognizing pictured objects. In our review of the pictures that are included in the first two grades of the two programs, we identified a number of potentially problematic stylistic factors. Examples of the following factors which may make picture elements hard to locate or interpret will be presented: artistic stylization, shifts in perspective, and size or completeness of a pictured object.

Artistic stylization. In an effort to expose children to a variety of artistic styles, the two programs have included story illustrations that range from the very realistic to the very abstract and from the very simple to the highly elaborate. In some cases, we find that such stylization may increase the task demands for identifying an important picture element.

In a Houghton Mifflin story ("Twelve Years, Twelve Animals," Level G [2. 1]), stylization takes the form of elaborate costumes worn by the story's animal characters (see Illustration 1 below). In the story the words for some of the animals pictured are just being introduced into the children's reading vocabulary. We believe that children might gain clearer conceptions of any animals that may have been previously unknown if the pictures were less ornate. The high degree of embellishment may increase children's task demands in identifying the animals since Poulsen et al. (in press) have suggested that excessive elaborate detail distracts children.

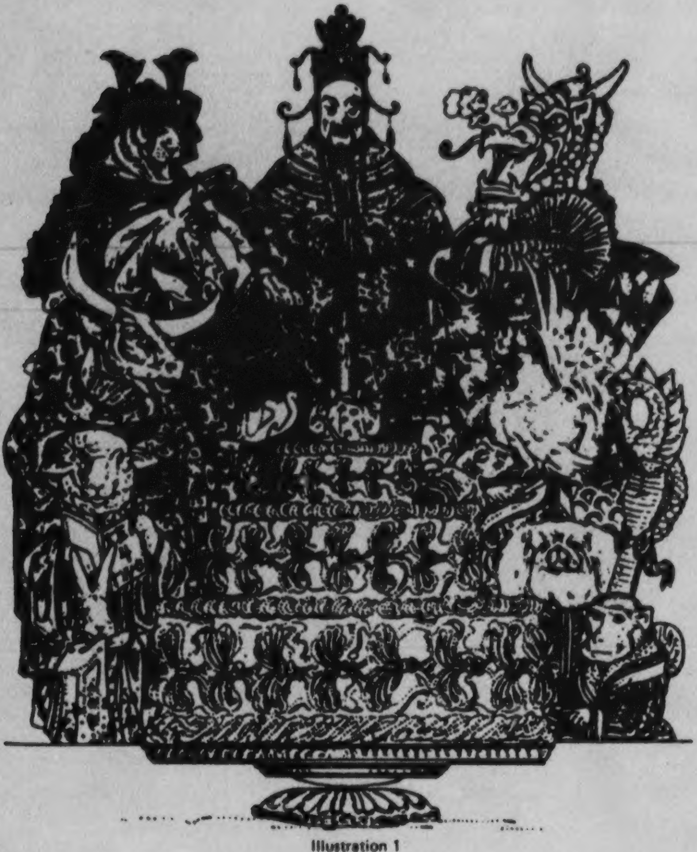


Illustration 1

Note. From "Twelve Years, Twelve Animals" by Yoshiko Samuel; illustrated by Leonard Lubin. Copyright 1972 by Abingdon Press. Used by permission of the illustrator. Cited from HOUGHTON MIFFLIN READING SERIES: *Sunburst.* (Level G, p. 93 PR)

Shifts in perspective. Another stylistic factor that has been identified as one that may cause comprehension difficulties is changing perspectives. Poulsen et al. found that children experienced difficulty in understanding a story in which the pictures underwent "gross changes in perspective" (pp. 25-26). When reviewing the first- and second-grade stories in the programs, we found a number of selections exhibiting what we considered to be radical shifts.

We would like to stress, however, that it would probably be very difficult, if not impossible, to illustrate a story without some variation in perspective from page to page. In many cases, shifts in perspective are appropriate and compatible with the story. But, in some cases, we believe that the variety of perspectives employed in a story may cause comprehension difficulties.

The first non-fiction selection in Houghton Mifflin ("Real Dinosaurs," Level D [1. 1]) is one example in which perspective might cause comprehension problems. Having indicated that many dinosaurs were enormous, the selection moves on to explain that dinosaurs could also be small. On the page of text focusing on the possible smallness of dinosaurs, two illustrations are included (see Illustrations 2 and 3; both illustrations have been reduced from the original). Illustration 2 compares the size of a small dinosaur with that of a dog and a man. Illustration 3 consists of the silhouettes of three dinosaurs--the smallest representing the dinosaur in Illustration 2. However, no instruction in the manual indicates to the teacher that the relationship between the dinosaur in the top picture (Illustration 2) and the smallest dinosaur in the bottom picture (Illustration 3) should be clarified. It seems that children may be unlikely to infer this relationship on their own.

Size or completeness of pictured objects. In some stories, important picture elements are too small to be easily identified or are not drawn in their entirety. For example, in a Houghton Mifflin version of the fabled race between the tortoise and the hare ("My Lucky

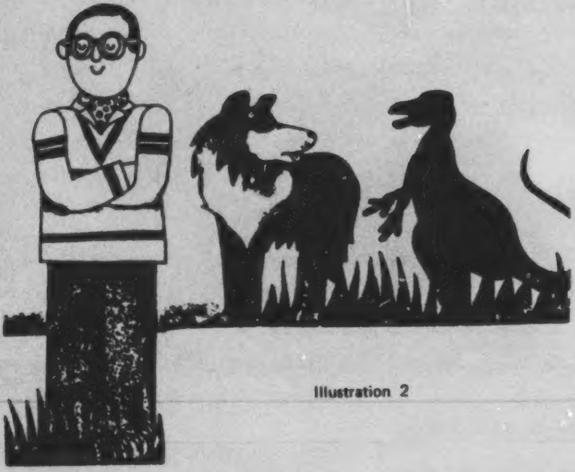


Illustration 2

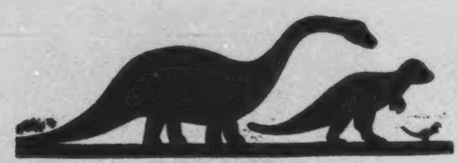


Illustration 3

Note. From HOUGHTON MIFFLIN READING SERIES: *Footprints* edited by William K. Durr et al. Copyright 1976 by Houghton Mifflin Company. Used by permission of the publisher. ("Real Dinosaurs," Level D, p. 77 PR)

Day," Level D [1. 1]), the rabbit and turtle race to a schoolhouse. The schoolhouse is shown only once in its entirety--and even in that picture, it is too small to be easily identified--and the road appears and disappears as it winds up and down hills. Of particular note is a picture five pages into the story (see Illustration 4 below) which includes small portions of the schoolhouse (designated by an arrow) and the road. Apropos this picture, the teacher asks: "Is Rabbit getting closer to the schoolhouse?" (p. 200 TM). We submit that, on the basis of the small section of the schoolhouse and the incomplete portions of the pictured road, it is hard to tell.

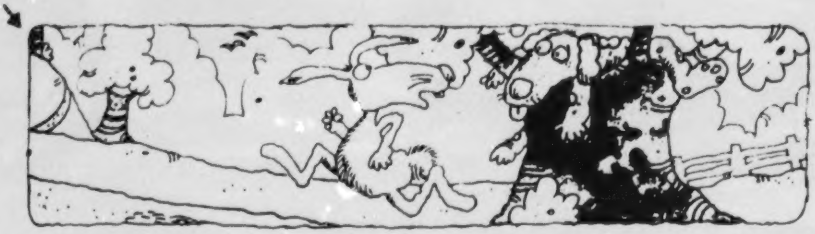


Illustration 4

Note. From HOUGHTON MIFFLIN READING SERIES: *Footprints* edited by William K. Durr et al. Copyright 1976 by Houghton Mifflin Company. Used by permission of the publisher. ("My Lucky Day," Level D, p. 47 PR)

We have highlighted certain stylistic factors which, in our view, might increase children's difficulties in identifying objects in pictures or might minimize the opportunities for children to use pictures as aids to story comprehension. These stylistic factors seem to be variables under the control of the artist, and it seems that problematic aspects of the style of the art can be minimized if the artist is made aware of the conceptual difficulties that pictures can pose for some children. Artists should understand that pictures must be more than entertaining or interesting; they are intended to help children with terms and concepts in the text and with story comprehension as a whole.

Problematic Aspects of Picture Content

In addition to comprehension problems that may be engendered by the style of the art, difficulties in comprehending can also arise because of the content of the art--the elements that are included in pictures or the overall view that is depicted. In our review of the pictures in the two programs, we have found instances in which pictures and text conflict; we have also found instances in which pictures seem likely to interfere with the text because they include confusable elements or they present a scene that is, on the whole, inappropriate. This is problematic to comprehension because, as experiments have shown (Peeck, 1974), when pictures and text disagree, children tend to rely on the information given in the pictures. In this section we will present examples of such problems of picture content.

Pictures that conflict with text. In both programs we have found cases in which pictures conflict with a premise that is central to a story or with a smaller portion of the printed text, i.e., a page or two. The following is an example of a conflict between a picture and a story premise.

In a Houghton Mifflin story from the first part of first grade ("Carla Wants to Fish," Level C [1.1]), a little girl plays hooky from school because she wants to go fishing in the park. A central concept of this selection is that after arriving in the park, the girl, Carla, cannot find anyone with whom to play, so she decides to go to school.

In defiance of the story tenet, when Carla first enters the park, the illustration provided seems to suggest that not only Carla, but every other child in the city as well has elected to play hooky on this particular day. The picture (in a reduced version) is provided below (Illustration 5), and the children pictured are circled for easy recognition.

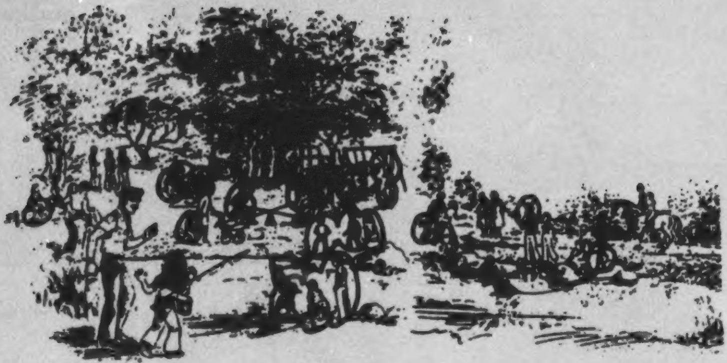


Illustration 5

Note. From HOUGHTON MIFFLIN READING SERIES: *Surprises* edited by William K. Durr et al. Copyright 1976 by Houghton Mifflin Company. Used by permission of the publisher. ("Carla Wants to Fish," Level C, pp. 10-11 PR)

Since the resolution of the story depends upon the protagonist's inability to find playmates at the park, it seems ill-advised to picture over 20 children at the beginning of the park episode.

Our next example demonstrates a conflict between the content of a picture and a single page of text. In this example, the inappropriate placement of the picture on the page gives rise to the conflict. The story is about a boy sleeping away from home for the first time (Houghton Mifflin, "Ira Sleeps Over," Level E [1.2]). The page of text begins with Ira and his friend Reggie playing with all the toys in Reggie's room. The rest of the page involves an exchange between Reggie and his father about going to bed, and the boys getting into bed. The picture accompanying this text is located after the textual material at the bottom of the children's page (see Illustration 6).

Since the picture depicts an event from the beginning of the page, its placement at the end of the page is a potential source of confusion for the reader. The appropriate picture-text sequence would result if the picture were placed at the top of the page.

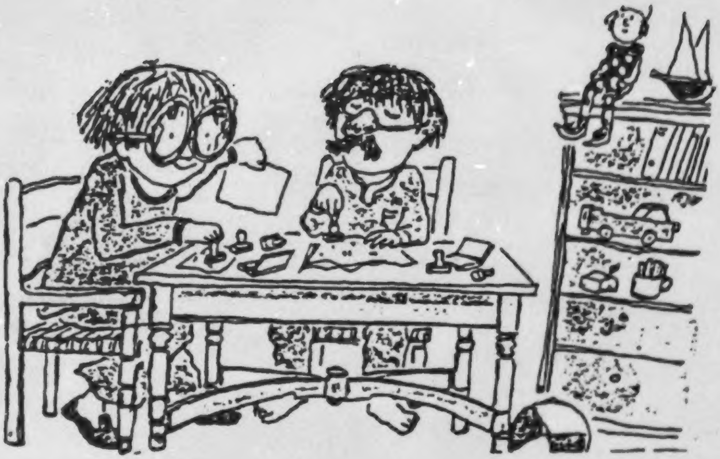


Illustration 6

Note. From "Ira Sleeps Over" by Bernard Waber. Copyright 1972 by Bernard Waber. Cited from the HOUGHTON MIFFLIN READING SERIES: *Honeycomb* edited by William K. Durr et al. Used by permission of the publisher. (Level E, p. 101 PR)

The story is one from the category mentioned in a previous section of this paper in which the publisher included a recognized piece of children's literature as one of the reading selections. In the original version of this story, the same series of events is delineated over a series of pages, and the picture of the boys playing occurs on one of the early pages. This indicates that Houghton Mifflin has created a sequencing problem rather than merely having reproduced a story which possessed a problematic aspect.

Pictures that interfere with text. Another characteristic of pictures which could cause comprehension difficulties is interference with the text. Interfering pictures incorporate confusable elements or represent inappropriate or distracting views of a text situation.

An example of a confusable element is drawn from a story in the Houghton Mifflin program ("Marty the TV Dog," Level D [1.1]). In this selection, two dogs, Marty and Peppy, are apprehended by a dog-catcher but mercifully are returned to their own homes. In several pictures, the dog-catcher's wagon is shown as having grille-like screens on its back doors (see Illustration 7 below).

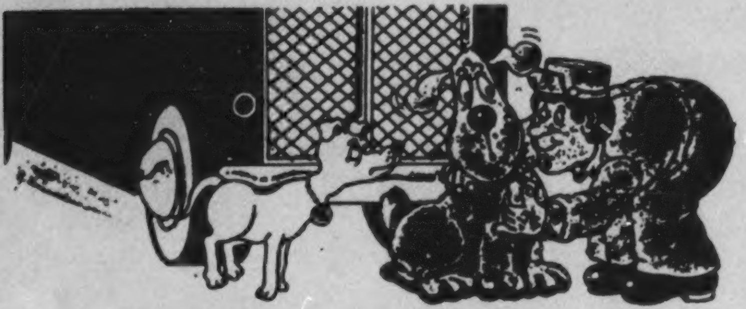


Illustration 7

Note. From HOUGHTON MIFFLIN READING SERIES: *Footprints* edited by William K. Durr et al. Copyright 1976 by Houghton Mifflin Company. Used by permission of the publisher. ("Marty, the TV Dog," Level D, p. 15 PR)

However, a picture near the conclusion of the story, when the dogs have already been released by the dog-catcher, also includes such a screen. The difference is that this time the screen is on the door of Marty's house, not the doors of the dog-catcher's wagon (see Illustration 8).

This second screen (on the house door) is a confusable element because it can easily be mistaken for the other, similar screen, i.e., the screen on the door of the dog-catcher's wagon. The screen on the house is unnecessary; it does nothing to facilitate children's identification of the scene. Rather, it has the potential to interfere with comprehension by leading children to conclude that the dogs are once again inside the dog-catcher's wagon.

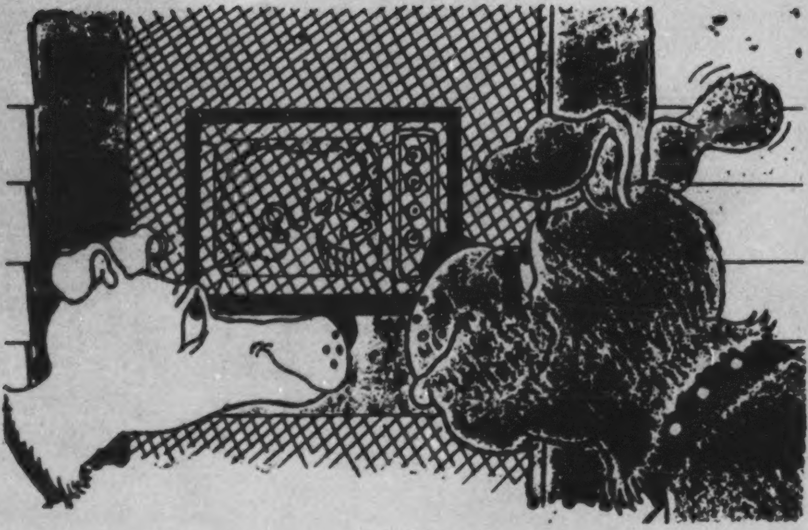


Illustration 8

Note. From HOUGHTON MIFFLIN READING SERIES: *Footprints* edited by William K. Durr et al. Copyright 1976 by Houghton Mifflin Company, and reprinted by permission of the publisher. ("Marty, the TV Dog," Level D, p. 15 PR)

The teacher's dialogue specified in the manual provides some help in disambiguating this situation. In pre-reading pciture discussion, the teacher asks about the picture in which the screen door on the house appears: "Where are Peppy and Marty now?" (p. 44 TM); this seems to be an attempt to establish that the dogs are (safe) at home. However, we find that it would be more facilitative of comprehension if the screen were omitted entirely from the house illustration.

In some cases, it is not merely a single element in a picture that can lead a child to a conclusion out of keeping with a printed text. The whole view of the scene that is presented can be misleading. An example is drawn from an early Ginn story ("Bozo," Level 5 [1.2]). In one story episode, a boy, Mike (on the left in Illustration 9 below), brings home a frog as a prospective pet. His mother directs him to dispose of it. Children are to read the next page to "find out what Mike did with the frog" (p. 178 TM). The text indicates that he traded the frog for a mouse. However, the picture accompanying the page suggests a much more intriguing course of action (see below). As is obvious from the illustration, what Mike did with the frog was to put it on his head.

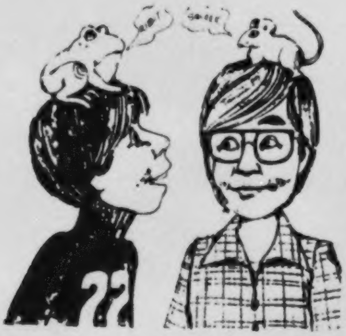


Illustration 9

Note. From *May I Come In?* (Teacher's Edition) of the READING 720 SERIES by Theodore Clymer et al. Copyright 1976 by Ginn and Company (Xerox Corporation). Used by permission of the publisher. ("Bozo," Level 5, p. 179 TM)

Another way in which a picture may present an inappropriate view of a text situation is to portray an incongruous event in the midst of a sequence of actions. An example occurs in a retelling of the fable of the lion and the mouse ("The Lion and the Mouse," Level 4 [1. 1]) in the Ginn program. In this story, the mouse rescues the lion from a net in which he is trapped. Since this is one of the earlier stories, pictures convey most of the action, and the text serves mainly to provide dialogue relevant to what is happening. However, the picture series showing the sequence of events in the story contains an irrelevant element. The pictures below (Illustrations 10, 11, and 12) are presented in the order in which they occur.

Illustration 10

The first picture (Illustration 10), showing the lion trapped in the net, is accompanied by dialogue in which the lion calls for help and the mouse appears to offer assistance.

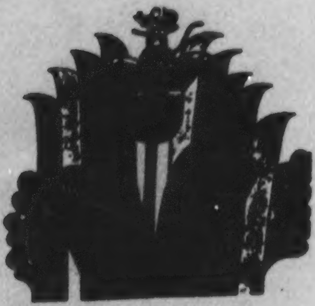


Illustration 11

The second picture (Illustration 11), showing the mouse standing in a flower, is accompanied by dialogue in which the mouse asserts that he is big enough to be of use in helping the lion.

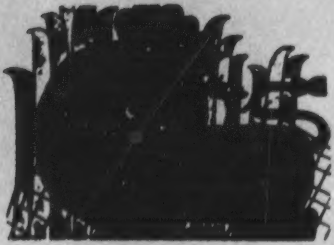


Illustration 12

The third picture (Illustration 12), depicting the mouse breaking the net with his teeth, is accompanied by dialogue in which the mouse indicates that he is performing an action to help the lion.

Note. From *Helicopters and Gingerbread* (Teacher's Edition) of the READING 720 SERIES by Theodore Clymer et al. Copyright 1976 by Ginn and Company (Xerox Corporation). Used by permission of the publisher. ("The Lion and the Mouse," Level 4, pp. 100-101 TM)

That the mouse is standing in a flower in the second picture in the series may serve to disrupt the child's processing of the sequence. As Warren, Nicholas, and Trabasso (in press) note:

> The interposition of semantically incongruous events between logically connected events may lead to inferences which were unintended by the writer or speaker. This possibility could lead to slower processing or even a disruption of a logically connected series of events in the chain. (p. 34)

The developers seem to have been aware of the potential problem here since the program manual attempts to compensate for the incongruous picture; the teacher is directed to "develop the understanding that, although Lion isn't seen in this picture, he can't be far away" (Level 4 [1. 1], p. 101 TM). Since children tend to rely on information presented in pictures, it seems that the best course of action is for program developers to take care that picture content is not inconsistent with the content of the text.

Problematic Aspects of Teacher Guidance in Relation to Pictures

In our discussion of problematic characteristics of pictures, we have made note of the presence or absence of teacher comments which may help to disambiguate problematic picture situations. In some cases, however, it is teacher dialogue itself which can be problematic. Sometimes the teacher is directed to bring children's attention to irrelevant picture elements which could serve to lead comprehension astray. Houghton Mifflin, in particular, is vulnerable in this area because a picture discussion element is included for every Silent Reading Unit of every story in the first three grades. In Ginn, there is no element devoted to pictures, and discussion of pictures is more flexible and, generally, less extensive. Pictures receive little emphasis in the lesson after the first half of first grade.

An example of a case in which the teacher places undue emphasis upon irrelevant elements in the picture is drawn from the previously discussed Houghton Mifflin story of a boy who sleeps over at a friend's house for the first time ("Ira Sleeps Over," Level E [1.2]). The conflict of this story is Ira's wavering determination to take his teddy bear along with him on his overnight stay. In a two-page SRU, Ira is still debating this point. The content of this SRU is that his parents advise him to take the teddy bear along, whereas his sister needles him by insisting that his friend and host will laugh at the teddy bear. The pictures for these pages are shown below (in a reduced version) as Illustration 13.

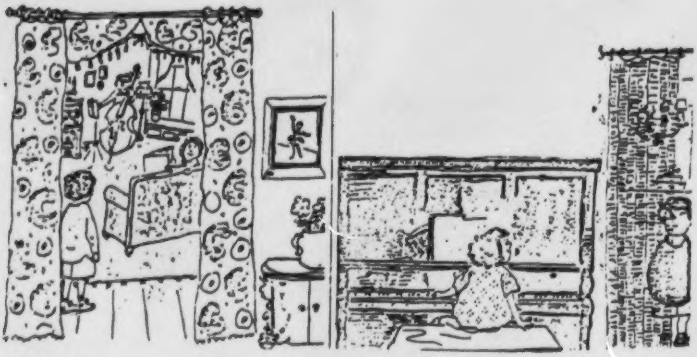


Illustration 13

Note. From "Ira Sleeps Over" by Bernard Waber. Copyright 1972 by Bernard Waber and used by permission of the publisher. Cited from HOUGHTON MIFFLIN READING SERIES: *Honeycomb* (Teacher's Guide), edited by William K. Durr et al. (Level E, p. 167 TM)

Picture discussion questions, provided prior to reading, are:

Look at the picture on [the first] page . . .
Who do you think the adults in the picture are?
What are they doing?
Look at the picture on [the next] page . . .

> What is Ira's sister doing?
> Do you think Ira's family enjoys music? . . . Why
> do you think that? (p. 167 TM)

The musical instruments and Ira's family members' enjoyment of music has nothing to do with the story. Such stress on irrelevant concepts might distract children from the main content of the pages, the debate about the teddy bear.

Summary and Conclusions

In this section, we reviewed aspects of pictures and picture discussion elements that seem problematic. In seeking to identify aspects of pictures which might impede comprehension, we suggested two general categories: style of the art (the way in which pictures are drawn) and content of the art (what is drawn).

The stylistic factors that we discussed were artistic stylization, shifts in perspective, and size and completeness of pictured objects. Our conclusion on the style of pictures is that pictures should help to clarify the text, not pose comprehension problems in their own right. Accordingly, attempts by programs to include a range of artistic styles should not take precedence over the aim of devising pictures which children understand easily. An element that is in several pictures should not undergo radical changes in size, or at least shifting perspectives should be discussed by the teacher. Finally, key picture elements should be large enough to identify easily and should be drawn in their entirety whenever possible to further facilitate identification.

We speculated that picture content could be a problem in cases where the content of the pictures conflicts with the text or interferes with the text by including confusable elements or an inappropriate view of a text situation. Since research has shown that picture content that is out of keeping with a text has a negative effect on comprehension (Peeck, 1974), it seems that efforts should be made to keep pictures and text consistent.

Problems with pictures may be caused or exaggerated by teacher guidance. In cases where a teacher is directed to draw attention to irrelevant picture details, these details may distract children from the text or confuse them. This problem occurred chiefly in Houghton Mifflin because of the program's emphasis on the discussion of pictures in each reading lesson.

In our view, problematic picture situations could be eliminated if program developers gave more deliberate consideration to the role of pictures in early reading materials. Since pictures are often an integral part of the text in early grades, every effort should be made to assure that pictures highlight, clarify, or complement text concepts.

Previous Knowledge Assumed by the Texts

In this section, we consider texts beyond the very earliest ones, i.e., those used during the later primary grades through sixth grade. Our focus here is not so much on the textual materials themselves as it is on the previous knowledge required before the reader can gain full understanding of a particular text. In many instances, starting in approximately third grade and continuing through sixth, the two reading programs under consideration here have included stories in which knowledge beyond everyday experiences is required for comprehension. As the materials begin to progress into unfamiliar territory by including concepts that the children have not encountered even vicariously, there is both positive and negative potential. The materials provide increase opportunities for adding to the child's pool of information, but they also provide increased opportunities for comprehension to go awry if the unfamiliar concepts are not clarified during the reading lesson.[6]

Recent research has highlighted the importance of a reader's previous knowledge in comprehension. It has been pointed out that prior knowledge provides a framework that helps the reader assimilate new information. For example, it provides guidelines for recognizing what is important about a given topic and it allows appropriate inferential elaboration to be made about that text. (See, for instance, Adams, Anderson, & Durkin, 1977; Anderson, 1977; Brown, Smiley, Day, Townsend, & Lawton, 1977; Carroll, 1977; Trabasso & Nicholas, in press, for further elaboration of the relationship between prior knowledge and comprehension.)

Obviously, children have a more limited knowledge base than adults. What should be obvious as well is that children's limited knowledge must be taken into consideration in the preparation of reading materials. Why then have Ginn and Houghton Mifflin in their more recent editions gotten into what we consider to be a serious problem, i.e., employing texts that require a considerable previous knowledge base to facilitate understanding of the content? We believe that the two reading programs have acted with good intentions: In an attempt to allay criticism directed at earlier editions for being too stilted, the basals have included "good" literature in grades three through six drawn from recognized published children's works. In order to provide materials encompassing the diverse interests of our pluralistic society, the programs have included selections focusing on a range of special interests. In this sense, the basal programs are trying to be "everything to everybody." As a result, these newer texts have exacerbated the following problem: that reading instruction should build knowledge but that knowledge is often prerequisite to understanding the reading selections.

---

[6] Here it is important to note that we are discussing stories, narratives, not other discourse types. And while recent work has shown that children do understand narratives in terms of their structure (see, for example, Stein & Glenn, in press; Trabasso & Nicholas, Note 1), it should not be construed that children therefore can always comprehend the contents of narratives.

If they handled it well, the basal programs could reduce this problem. They could better utilize the structure of the directed reading lesson to have the teacher provide background information in an attempt to begin to build in the students the knowledge structures necessary for comprehending the reading selections. Rather than taking advantage of the preparation component of the directed reading lesson to cope with this problem, what seems to have occurred in recent editions is a reduction of pre-reading activities. We sense this to be in response to a notion in the reading field that reading class should attend to more reading and less talking. Yet there is strong evidence (Sticht, Beck, Hauke, Kleiman, & James, 1974) that new concepts are better acquired through oral/aural presentation than through printed presentation, at least until children can comprehend as efficiently by reading as they can by listening, which typically occurs around the seventh or eighth grade.

Let us examine some examples drawn from third- through sixth-grade stories in Ginn and Houghton Mifflin. We have deliberately selected stories that embody concepts we assume are likely to be unfamiliar to many target-aged children. Our intent here is to examine how or whether the programs build enough background to enable the students to understand the texts.

Examples of Pre-Story Familiarization with Story Concepts

We begin by presenting an example for which background knowledge has been, in our view, effectively provided. We then move to less effective examples drawn from stories that contain a central concept likely to be unfamiliar to children. Our final set of examples concerns stories in which the potential problems in comprehending the central concept are compounded by a network of unfamiliar terminology.

An effective example. One of the stories in Houghton Mifflin from late third grade provides an excellent example of the kind of care that can be taken to try to build the knowledge required for children to comprehend stories incorporating unfamiliar material. The story we will discuss here is the earliest example of historical fiction in the series ("The Wooden Cat Man," Level J [3.2]). It is set in China in 1913 and concerns a maker of rat-traps who becomes the official kite-maker for the Mandarin. In the selection, the Mandarin and his subjects live in a remote village and have never seen an airplane. When a Western pilot lands his plane near the village, the Mandarin and his people are astounded. Inspired by the unprecedented event, the Mandarin declares a contest in which kites resembling the airplane are to be made. The winner will become his official kite-maker.

The story opens, "In the Year of the Water Ox, a long time ago" (p. 271 TM). Such an introductory line is unusual and perhaps needed to clue children that they are entering a different world from the one they know. Importantly, however, the children are prepared to encounter this atypical story opening. In the pre-reading discussion, the teacher has explained:

> In the old Chinese calendar, each year is named for an animal. . . . The story you are going to begin reading today . . . took place in the Chinese Year of the Water Ox. The Year of the Water Ox was the same as the year 1913 on our calendar. (p. 270 TM)

Later in the story, the idea that the characters are so astounded by the sight of an airplane might be puzzling for some children since airplanes are so ubiquitous today. The teacher tries to preclude possible confusion by explaining prior to reading:

> There are many things we are accustomed to seeing today that were unusual sights in the year 1913. Automobiles and airplanes had been invented--but many people had never seen or even heard about them. (p. 270 TM)

In this story, therefore, through pertinent pre-reading discussion, several potentially unfamiliar concepts are explicated, thereby providing the knowledge needed for comprehension. In addition to facilitating comprehension of this particular story, this kind of information is generative, as it adds to the store of knowledge about an unfamiliar cultural milieu.

We must point out that one of the reasons we believe that prior knowledge gaps can be effectively filled by the teacher during pre-reading discussion in this example is that the gaps themselves are not enormous. For the students' first encounter with historical fiction, the program developers have selected a text that is itself sensitive about couching the unfamiliar milieu in terms that children are likely to know already. This clearly facilitates the teacher's role in trying to build the background knowledge necessary for students to comprehend the text.

Some less effective examples involving one central concept. Here we will present two examples in which we believe background knowledge around the central concept crucial to each story should have been developed prior to reading.

A Ginn story from late third grade may present comprehension difficulties for students because of the inclusion of an unfamiliar concept that is not explained prior to reading. In this tall-tale selection ("Slue-Foot Sue the Rainmaker," Level 9 [3.2]), Slue-Foot Sue ends a drought by having Pecos Bill lasso the Little Dipper to tip it so that "the water inside . . . pour[s] out" (p. 211 TM).

We believe that background information should have been presented about dippers, both about the function of dippers in general and also about how that particular constellation of stars likely came to be termed the "Little Dipper." Since dippers are all but anachronistic in today's world, it may be assumed that not all children will be aware of the use of dippers in ladling water. It also may be assumed that not all third graders reading this story will already know that constellations are named after objects or people that they seem to resemble. In order for children to understand the clever trick that solves the problem of this story, they must be able to follow the logic that since dippers hold water, a "dipper" spanning the sky must hold a lot of water. Thus, the initial premise that dippers hold water, and the connection between dippers in general and the Little Dipper in particular, are essential ingredients for a complete understanding of the story. The teacher should be alerted by the program to make certain that the children have this information in pre-reading discussion. Unfortunately, discussion around this concept is not specified by the program as a pre-reading activity.

Our other example revolving around lack of information about a specific concept concerns a fifth-grade Houghton Mifflin story that seems to assume a working knowledge about baseball ("The Computer Triumphs Again," Level L [5]). We have extracted the following paragraphs from the story to illustrate our point:

> "Two up, two down," Barney chattered as Rex Noyes moved in, a mean look on his face. Rex tapped the plate with the top of his bat and squared off.
>
> Five pitches later he had worked Dusty up to a full count. On the next one, Rex hit a screamer to Herbie at short. It was too hot to handle and Herbie juggled it. When he finally got a grip on it, his peg to Barney was wide. (p. 360 TM)

Imagine reading these paragraphs without having an adequate baseball framework! The student would be quite likely not to understand the action unless s/he already had elaborate knowledge to provide ideational scaffolding in which this content could be interpreted. Yet the pre-reading discussion does nothing to build a knowledge framework in which to interpret this story; it assumes, wrongly, we believe, that basic knowledge crucial to comprehending the text about the positions and play of the game of baseball is already established.

We will here introduce another variable into our discussion. The following examples contain not only a central concept which is not adequately introduced prior to reading, but also a high density of potentially unfamiliar terms.

Less effective examples involving one central concept compounded by unfamiliar terminology in the story. A fifth-grade selection from the Houghton Mifflin program is an excerpt from a biography of Harriet Tubman ("Flight to Freedom," Level L [5]). It seems to assume a working knowledge of the lifestyle of the antebellum South. Here, as in all selections, individual differences play a large role. Many fifth graders may be sufficiently versed in pre-Civil War history, while others may not yet have encountered this period in their studies and may therefore have little or no knowledge about the period.

The program attempts to set the scene by providing an introduction containing general background about Harriet Tubman. These introductory paragraphs are located in the students' readers, but are read aloud by the teacher. The introduction does not establish information about slavery that students will later need to interpret the story. Rather, it assumes that the knowledge is already present as it alludes to various facets of a slave's life. For example, the introduction explains that Harriet was "born a slave on a Maryland plantation" and "made her . . . escape" in her twenties, that she subsequently "guided . . . many slaves to freedom," avoiding capture by "slave hunters and their dogs." It is also noted that: "During the Civil War, she served the Union army . . . as a cook and a nurse . . . as a spy and a scout" (p. 31 TM). The introduction thus does not provide much information about slavery except that it is likely something one would want to escape from, at great danger to one's safety.

In the pre-reading discussion, the teacher directs students to "suppose you had been born a slave" (p. 30 TM); s/he then asks a question eliciting their views on the value of freedom vis-à-vis the safety of remaining with one's home, family, and friends. To us, this is just not a sufficient provision of information about slavery. Granted that there is a limited amount of time to be devoted to pre-reading discussion, we still maintain that the subject could here be introduced more fully.

The problem is compounded by use in the story itself of much terminology directly related to slavery: Quaker, Underground Railroad, free states, overseer, trader, bloodhounds, runaway, patrol, etc. Without an appropriate background in which to fit these words, comprehension of the story seems likely to suffer. We might suggest here that in addition to having the teacher provide more background information, the selection would likely be better understood by students if some of the nonessential terminology could be omitted from the story. For example, when Harriet is escaping, she travels through swamps, walking carefully "around the hummocks." The omission of such nonessential words would not impair story development and would free the students from devoting processing time to them. Particularly since the concept of slavery is so involved, and a well-developed picture of its essence is difficult to build in the short time allocated to pre-story discussion, it seems all the more critical that the text itself should not be unnecessarily demanding.

In a Ginn story, a related situation occurs involving a background of concepts about the sea. We wonder what kind of comprehension is likely to occur for students who do not have the nautical or sea-related knowledge assumed by the following excerpts from a story about a boy who prepares a net he will use for fishing ("The Sea Devil," Level 13 [6]):

> He took the net from the bucket, slipped the noose in the retrieving rope over his wrist, and pulled the slipknot tight. . . .
>
> The basic design of the net, unchanged in three thousand years, was a mesh circle, measuring close to fifteen yards in circumference and could, if thrown perfectly, blanket one hundred fifty square feet of sea water. In the center of this radial trap was a small iron collar where the retrieving rope met the twenty-three separate drawstrings leading to the outer rim. Along this rim, spaced an inch and a half apart, were the lead sinkers.
>
> The boy raised the iron collar a foot above his head. The net hung soft and pliant and deadly. He shook it gently, making sure that the drawstrings were not tangled and that the sinkers were hanging true. Then he eased it down and picked up the paddle. (p. 34 TM)

Once again, the discussion is rather technical and text itself could have probably been edited to reduce the processing load. But even without editing, a student who has the appropriate background knowledge in which to view the story is much more likely to be able to understand what the passage says. There should have been prereading discussion and perhaps even picture diagramming of the net that the boy would use.

Though we could cite more examples, we have chosen to present a limited number to illustrate our notions about the kind of previous knowledge that is assumed by reading texts. Additional examples of the same concept embodied in different content would provide no further elucidation of our point.

In general, setting the stage for comprehension through the prereading discussion appears quite perfunctory in both programs; for texts that require considerable prior knowledge, we believe the discussion should certainly be given more serious consideration by program developers.

Summary and Recommendations

As these examples have illustrated, the new basal reading programs are including more conceptually difficult material earlier in the instructional sequence in their latest editions. Yet the crucial point is that we did not find the programs providing any systematic differential preparation for those texts that are obviously more difficult than others in terms of the prerequisite knowledge they require for understanding. In fact, there seems to be a trend to reduce the amount of oral preparation for eading in response to a perceived need to provide more reading and less talk in the reading class. However, recent research has highlighted ideas that would suggest that a reduction in preparation before reading may be inappropriate. Here we refer to the work of Anderson (1977), Brown et al. (1977); Carroll (1977), Chiesi, Spilich, and Voss (1979), Spilich, Vesonder, Chiesi, and Voss (1979), Sticht et al. (1974). Their recent work stresses what has long been intuitively suspected: that the ability to acquire new knowledge depends heavily on the extent of one's previous knowledge. Sticht et al. have provided strong evidence that an oracy to literacy sequence, in which new concepts are introduced orally before children read about them, is the most effective for communicating new knowledge, at least until the gap between comprehending aurally and comprehending by reading closes around the seventh or eighth grade.

For quite some time, there has been a notion that content subjects could deal with more than just content, i. e., that reading can be taught through the content subjects. Relatedly, our examination of background knowledge has moved us to suggest that reading instruction should deal with more than just reading, i.e., attention should be given to teaching about the content that is being presented in the reading selections. Acknowledging the oracy to literacy sequence, pre-reading time should involve oral experiences aimed at developing new knowledge frameworks pertinent to the upcoming reading selection.

Before developing pre-reading activities, the two basals should carefully monitor the knowledge requirements for the texts,[7] and they should provide specifications for helping the teacher to develop background knowledge for those texts where it is necessary. Careful editing should alter the stories to delete extraneous terminology. If some stories cannot be adapted to fit the knowledge levels of the students, those particular selections should be omitted from the programs.

We realize that wide individual differences do make it impossible for the programs to accommodate to the multitude of variations in background of the students who use the programs. But we believe that designing more suitable pre-reading activities, editing out unnecessary terminology, or even discarding certain selections will make the selections more appropriate for general use. Then the programs also have the duty of alerting teachers to the fact that children come to texts with varying degrees of relevant previous knowledge, and that their own teaching needs to be adjusted accordingly. Teachers will have to evaluate each child, or group of children, and attempt to make a match with what s/he or they need, and then attempt to teach children whatever they need to know for a particular story, providing the information through oral/aural experiences. Ideally, as oracy develops and the child becomes more generally knowledgeable, literacy (reading fluency) will be more easily acquired since there will be fewer gaps between the previous knowledge requirements important for understanding certain texts and what the child actually knows.

---

[7] We must admit that we know of no way of establishing appropriate matches between the previous knowledge needed for a given text and the knowledge possessed by target-aged children other than the use of "informed judgment" or an actual tryout of materials.

We are aware that our recommendations in this section have been phrased in very general terms, e.g., "teach children whatever they need to know for a particular story." In our defense, let us liken the prior knowledge problem to an iceberg. One can attempt to reduce the size of an iceberg in two ways: first, by attempting to melt its overall size, and second, by chipping away at a specific part of its tip. Our general recommendations here are in the direction of attempting to melt the overall size of the prior knowledge problem. By offering even rather general suggestions about building knowledge bases for certain stories that seem to require knowledge beyond everyday experiences, we think we may be contributing somewhat to lessening the size of this immense problem. We adopt the second approach, that of chipping away at a specific part of the tip of the iceberg, in our next section, which considers vocabulary, a specialized part of background knowledge.

Vocabulary

In this section, we consider a specific aspect of background knowledge. We examine vocabulary instruction as provided by the two programs for grades three through six to describe how the programs handle vocabulary development and to evaluate its effectiveness in building the word meanings necessary for textual comprehension.[8] It is intuitively obvious that vocabulary knowledge is vital for reading comprehension. A body of research supports this intuition. Several large factor analytic studies (e.g., Davis, 1944; Thorndike, 1917) have determined that a strong link exists between vocabulary knowledge and reading comprehension. Experimental evidence, though not conclusive, seems to indicate that instruction that positively affects vocabulary performance also improves reading comprehension (Draper & Moeller, 1971; Gray & Holmes, 1938; Thompson, 1973). It would appear, then, that if children are to mature in their comprehension skills, it is essential that they expand their vocabularies.

---

[8] We are not studying vocabulary instruction in the earlier primary grades since the instruction in those grades is targeted toward having students recognize the printed forms of aurally familiar words. We consider word recognition to be of major importance (Beck, in press; Beck & Block, 1979; Beck & McCaslin, 1978), but the issue in this section is the acquisition of word meaning.

Both of the programs, like virtually all reading programs, explicitly include the development of word knowledge as a goal. It is almost certain that children will add to their store of word meanings as a result of their reading instruction in the four years spanning grades three through six. However, it is even more certain that both the quantity of words acquired and the quality of knowledge about those words will be highly variable among children exposed to the same reading program. Our concern is that vocabulary instruction be sufficient to insure that the quantity and quality of knowledge children have about the words they will meet in reading texts do not impair their comprehension of those texts.

Levels of Vocabulary Knowledge

It is, of course, a very complex matter to determine precisely what it means to know the meaning of a word. For example, Cronbach (1942) specified five performance outcomes associated with knowing the meaning of a word, each of which seemed to imply a different level of knowledge about word meaning. More recent work that includes vocabulary as a form of concept learning highlights correct classification behavior as the prime indicator of knowledge of word meaning (Humes, 1976; Markle, 1975; Block & McCaslin, Note 2). For our purposes in this paper, however, we are not greatly concerned with outcomes specifically measuring word knowledge. The outcome with which we are concerned is much more general: that word knowledge be extensive enough not to hinder comprehension of the reading texts. For our present purposes, we have distinguished three levels of word knowledge: established, acquainted, and unknown. A word at the established level is one whose meaning is easily and rapidly (perhaps automatically) accessed. A word at the acquainted level of vocabulary knowledge is one whose meaning is recognized, but only after deliberate attention is focused on it. A word at the unknown level is one whose meaning has not been established in semantic memory. A hypothetical example may serve to distinguish between the acquainted and established levels. In reading about "an enormous animal," a third grader might pause momentarily to search his/her memory before associating enormous with its meaning; in this case, enormous is at the acquainted level. The same child would most likely have immediate understanding of the word animal, an established word in most third graders' vocabularies.

In terms of the relationship between levels of word meaning and comprehension, it is obvious that the best situation for comprehension of a text would be when virtually all of the words in a given text are in the established repertoire of the students reading the text. If this were the case, processing could be directed toward the meaning of a sentence, a passage, or a discourse; it would not have to be interrupted for individual word "searches." Indeed, it is this kind of textual situation that competent adult readers most often encounter. New ideas are expressed in established words. By contrast, if a text contains too many unknown words and/or words at only the acquainted level, comprehension of the textual message may be restricted. Unknown words can create gaps in the meaning of a text; if too many gaps occur, the student may not be able to construct meaning. While words at the acquainted level may not cut into the meaning of a text, they do interfere with the processing of the text, since attention must be diverted from at least part of what is a limited processing capacity to search for the words' meanings.

If processing is frequently interrupted for such searches, it may be slowed to the extent that comprehension suffers. For, as Lesgold and Perfetti (1978) have stated, "In the nonideal world of everyday reading, that which takes a long time to do may not get done" (p. 332).

Application to Vocabulary Instruction

Given the discussion to this point, it would seem that there are some direct applications for the vocabulary strand in an intermediate reading program. First, instructional experiences and strategies should be supplied by the programs for moving unknown words into acquainted words and acquainted words into established words. While we acknowledge that some words may be so interesting to a child that a single encounter may move them from the unknown to the established level, we believe that more often word knowledge develops along the unknown to acquainted to established progression. It follows that if adequate instructional experiences and strategies are found in the programs, then children will not encounter in their reading large quantities of unknown words and/or words at the acquainted level of knowledge, words which may restrict comprehension.

We will shortly turn out attention to evaluating Ginn and Houghton Mifflin in terms of their provisions for moving words into the established repertoire. Before doing so, we will sidetrack the discussion briefly to examine how the texts are selected by the programs in terms of vocabulary difficulty and how specific words are selected from the texts for vocabulary development treatment.

The Texts

Vocabulary difficulty is one among many considerations taken into account by program developers in constructing or selecting from existing published materials the texts to be included in their series. In the intermediate grades, Houghton Mifflin and Ginn typify the more recent tendency of basal publishing houses to include many selections from independently published works. Control over vocabulary difficulty in the intermediate grades is thereby accomplished through readability analysis; that is, readability formulas are applied to the selections to determine their difficulty. For the most part, readability formulas take into account sentence length and vocabulary difficulty. Depending on the particular formula, vocabulary difficulty can be determined by such components as: syllabic count, the number of different words in a sample of 1000 words, the number of affixed morphemes, or the percentage of words not found on the Dale list of 3000 "easy" words (Klare, 1963). Recently, readability analysis has been criticized for its atheoretical nature, i.e., that it is not based on a theory of comprehension. (See Kintsch & Vipond, 1978, for a discussion of this matter.) While we too question the nature of readability analysis, we do believe that it functions as a broad sorting device to place selections with heavier vocabulary loads at higher grade levels, i.e., further along on an arbitrary scale of difficulty.

After readability formulas have been applied to the selections and they have been ordered along the third- through sixth-grade continuum, the program developers "flag" (i.e., they note in the teacher's manuals) target words in each selection. Target words are those that the developers believe might cause pronunciation and/or meaning difficulty for children. Here it is important to note that not all new words (i.e., words presented in print for the first time) are designated as target words in the intermediate grades. Since target words are only a subset of new words, the determination of which new words in a selection to "flag" is based on the developers' intuitions concerning which words may not be known by typical target-aged children, which words are important to comprehension of the particular text at hand, and which words are generative, i.e., likely to be used in different discourses as opposed to having limited use with specific subject matter.

Given the range of individual differences in word knowledge among the millions of children who read the basal selections, the determination of difficult words for "typical" children can be little more than a series of educated guesses. Even though we differed at times with both sets of developers concerning which words we would "flag" as important to comprehension of particular texts, in general, we think they make pretty good guesses about including words that we would likely place in our unknown or acquainted categories.

To provide the reader with a sense of the target words in each program, Table 5 lists all the words beginning with a found in each of the program's fourth-grade glossaries, the glossaries being compiled from the target words. It is our opinion that most of the words in Table 5 are indeed at the unknown or only acquainted levels of many fourth graders. We too would have flagged most of the words in Table 5. In addition, we think that many, but clearly not all, of the words in Table 5 are generative, that is likely to be encountered in a variety of textual contexts.

Thus, from this digression into the texts that children read in third through sixth grades, we can conclude that the texts are at least broadly ordered in terms of vocabulary difficulty and that at least some of the potentially difficult vocabulary is flagged. Let us now move on to describe specifically the vocabulary instruction in both programs.

Vocabulary Instruction in Ginn and Houghton Mifflin

Traditionally, the development of word meaning is attended to through instructional events that occur prior to reading, during reading, and after reading. We will examine the programs in light of their vocabulary instruction for each of these points in the lesson.

Prior to reading. In most intermediate reading programs, the developers provide specific instructional strategies for dealing with the meaning of target words in the upcoming text. Houghton Mifflin,

Table 5

Target Words Beginning with *a* in the Houghton Mifflin and Ginn Fourth-Grade Tests

Houghton Mifflin	Ginn
ably	abacus
abroad	abandon
absorb	able-bodied
accuse	accusation
acquaintance	ache
ad lib	acknowledge
admiringly	admiral
adopt	admire
adviser	agency
affectionately	alert
Afghan hound	Allah
agriculture	allergic
ague	Alp
aisle	altar
alert	amateur
almanac	amber
altitude	ambergris
amble	ancient
amidst	Ankylosaurus
ancestor	apply
antelope	apprehensive
antic	Arabic numerals
anxiously	archaeologist
apparent	archer
appendicitis	arctic
appreciation	arena
approach	asphalt
appropriate	astonishment
aquarium	astronomer
arena	athlete
aroma	austere
arouse	await
arrangement	
astonishment	
astride	
astronomy	
awkwardly	

however, beyond the second grade, provides no specific instructional strategies with regard to pre-teaching words. Starting with the third grade, there is only the suggestion appearing once in each grade's teacher's manual that the teacher "may wish to pre-introduce those words [s/he] feel[s] may cause pupils difficulty . . . [by] writ[ing] the words on the chalkboard and us[ing] them in strong oral context" (Level K [4], pp. 8-9 TM). It is quite apparent that this statement is only a token inclusion in the manuals and that the developers prefer that the meanings of target words not be pre-taught.

In contrast to Houghton Mifflin, Ginn does reflect the traditional tendency to introduce target words prior to reading. Through the sixth grade, instructional strategies are provided for pre-teaching at least a subset of the words that have been flagged. Beginning in the fourth grade, target words are listed in the teacher's manuals as either words for attention or specialized vocabulary. Words for attention seem to be the more high frequency or more generative words; specialized vocabulary words are those important to a particular context. For example, in a story about an Indian girl's relationship with her grandmother, aspects of weaving are discussed ("Annie and the Old One," Level 10 [4.1]). The words loom and warp, specific weaving terms, are found under specialized vocabulary. Turquoise and hardship, words likely to be found in many different contexts, are listed under words for attention.

Instructional strategies for the pre-teaching of specialized vocabulary are not available. Selected words from the words for attention category are pre-taught by the teacher, and all words for attention are found in a glossary which appears in the back of the pupil's reader. Let us now examine some of Ginn's instructional strategies for pre-teaching words.

In most cases of pre-reading instruction in Ginn, the target words are presented in sentences, many of which incorporate definitions, e.g., "to think highly of someone is to admire that person," (Level 10 [4. 1], p. 22 TM) or "the car accelerated--that is, it speeded up--as it entered the superhighway" (Level 13 [6], p. 7 TM). The teacher writes such sentences on the board and children are called upon to read the sentences and to find the words that have the same meaning as the underlined word. There are a variety of minor variations on this theme. For example, the teacher writes the target words on the board and orally presents the context sentence for each word; or prior to providing context sentences containing the target words, the teacher attempts to elicit definitions from volunteers; or children generate original sentences containing the target words.

In our examination of Ginn's pre-reading activities, we sometimes found that the instructional context for a target word did not seem sufficient to promote the acquisition of the word's meaning. For example, consider the two sentences below from a fifth-grade lesson in which the teacher is directed to read each sentence and ask the children for the target word's meaning.

(a) The emperor, who is the ruler of this land, loves the people dearly.

(b) Zelda was not very patient waiting for the train because she wanted to get home right away. (Level 11 [5], p. 101 TM)

There is a difference between the two examples. In example (a), the definition of emperor is clearly included. The meaning of the target word can be gained directly from the content of the sentence. In example (b), the definition of patient is not present. The correct meaing of the word could possibly be inferred, but there are also incorrect meanings, such as happy, which are also supported by the context. Since multiple associations for target words are not given, the strength of the single association provided is all important. A context expressly constructed to introduce a word's meaning should give rise to an accurate meaning of the target word and should allow no other interpretations.

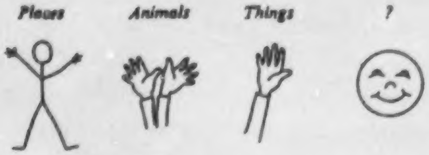
While we did not specifically analyze the hundreds of pre-story contexts provided by Ginn, our sense is that most are adequate, some are weak, and a few are inadequate. A variety of ways is available to illustrate a word's meaning, such as incorporating a brief definition, synonym, or explanatory phrase. It would seem that since these sentences are constructed specifically to convey a target word's meaning, it should be the instructional designer's first order of business to see that the meaning of a word is clearly demonstrated. The following examples from Ginn's pre-story vocabulary instruction have contexts that we judge as good for communicating the meanings of the target words.

> To reach the summit of the mountain, the highest point, would take several days of climbing. (Level 11 [4.2], p. 307 TM)
>
> When the barometer (which measures the pressure in the air or the atmosphere) falls, it means only one thing: foul weather's on the way. (Level 12 [5], p. 80 TM)
>
> I finally became aware of what Steve was trying to tell me. I finally perceived his point. (p. 80 TM)

Such pre-reading instruction seems helpful in promoting initial acquisition of the meaning of the target words.

Sometimes, however, variations in Ginn's pre-reading instructional strategy move the focus of the lesson away from its purpose. In a third-grade lesson, for example, after the target words have been briefly introduced, the teacher is directed to play a game with the children by using the 13 new words. S/he is told to:

> Point out to the children that some of the words on the chalkboard are names of actual places such as Connecticut. Other words name animals. Others name objects

> that one may touch. And the remainder fall into none of these groups.
>
> Write the following headings side by side:
>
> 
>
>
> Make a simple sketch beneath each heading as shown. Explain that when you point to the name of a place, pupils are to stand up and sit down quickly, when you point to the name of an animal they are to clap once, when you point to the name of an object one may actually touch, they are to raise their right hand, and when you point to an object that fits none of the categories they are to smile as broadly as they can. (Level 9 [3.2], p. 181 TM)

This activity seems to us to be poor for facilitating initial acquisition. The children are likely to be distracted from the content of the instructional sequence, i.e., the relationship between words and the broad categories to which they belong. Children are likely to attend instead to the physical responses required of them, such as standing and handwaving.

In addition to distracting responses, we also found distracting stimuli. For instance, in a fourth-grade lesson, the following directions are given for the introduction of five target words which the students have just looked up in the glossary:

> Tell them to write three original sentences, and to include two of the five words in each sentence. Each of the five words must be used at least once in the three sentences. Pupils may use any of the five words more than once if they wish. (Level 11 [4.2], p. 320 TM)

Such directions may confuse students and teacher alike; the mechanics of determining how many words to use may well become the child's primary concern and may get in the way of creating interesting sentences using the target words appropriately.

In a similar vein, we sometimes found a useful activity applied to inappropriate target words. For example, in a third-grade lesson, after a very brief discussion of the definitions of the target words, a game of pantomime occurs. The children are directed to pantomime the words: paleontologist, laboratory, plaster, museum, and skeleton (Level 9 [3.2], p. 190 TM). It would seem to us that the notion of acting out words has merit, yet these particular words are not the most suitable for physical representation.

Even though we could cite more examples of problematic pre-reading activities, in fairness to Ginn, we want to point out that such sequences are not a general characteristic of its intermediate grades pre-reading vocabulary pedagogy. The examples were presented here to illustrate that developers should be careful not to stray from the point of the lesson in their attempt to develop motivating and interesting lessons. They should not introduce into the task irrelevant or inappropriate conditions that may take away from the instructional effectiveness of the lesson.

In summary, concerning vocabulary treatment prior to reading, we strongly disagree with the Houghton Mifflin developers' implied position that no pre-teaching of meaning is necessary. It seems to us that instruction for the purpose of moving unknown words to the acquainted level must take place prior to reading. If it does not, we believe that comprehension of the textual selection is likely to be inhibited for the reason we mentioned previously--that unknown words create gaps in comprehension. The instructional strategies used by Ginn to introduce target words before reading are probably useful for moving a word from the unknown to the acquainted level. We did note, however, some weaknesses in various lessons where either attention had not been given to the development of the clearest possible context, or instructional attention was inappropriately focused on some aspect of the lesson other than the association of a word with its meaning.

During reading. According to most authors of reading methods textbooks, learning word meanings through context is the preferred method of building children's vocabulary repertoires. It is very important, however, to distinguish between two kinds of contexts that often get confused in discussions of the "context" method of vocabulary instruction. The first we label created contexts (or pedagogical contexts); it refers to contexts such as those in Ginn's pre-reading instruction that have been specifically designed to introduce the meaning of a word. The second category is natural contexts and refers to contexts that occur within natural text selections written for communication rather than for specific demonstration of the meaning of particular words.

Despite Ginn's pre-teaching of selected target words, in both of the programs the main vehicle of vocabulary instruction is the reading selection. Children are expected to learn new words by inferring their meanings from the text. The contexts of target words in a selection are natural rather than pedagogical contexts since the target words are taken from an existing story. Since the texts are not constructed specifically to teach the meanings of target words, it seems that the extent to which a context is likely to lead a reader to the meaning of a target word depends on chance rather than design.

Pursuing this idea in our review of the story contexts of target words, we speculated that their effectiveness falls along a continuum, and we identified four kinds of contexts on the continuum. We then conducted an informal "test" of examples from each category to determine whether our hypothesis concerning differing degrees of effectiveness was valid. Below we will describe our four context categories, present an example of each, and then discuss the results of our informal "tests."

At one end of our continuum are misdirective contexts, those which seem to direct the student to an incorrect meaning for a target word. Next are nondirective contexts, those which we speculate are of no assistance in directing the student toward any particular meaning for a word. Next are general contexts, those which seem to provide the student with enough information to place the word in a general category. Finally, there are directive contexts, those which seem likely to lead the student to a specific, correct meaning for the target word.

An example of a context from the misdirective end of the continuum is drawn from a fourth-grade Ginn story ("The Case of the Blueberry Pies," Level 10 [4. 1]). The story concerns a pie-eating contest and footrace won by a child who is the foe of the story's protagonists. The target words are underlined in the following text excerpt that describes the victory scene:

> His lips were parted in a wide smile of victory.
>
> "He sure has beautiful teeth," said Sally grudgingly. "Look at him strut. You'd think he was on television doing a toothpaste commercial." (p. 90 TM)

If children do not already know the meanings of grudgingly and strut, i.e., if these words are not already present in at least the acquainted level of knowledge, the contexts in which the two words are found could give rise to incorrect meanings. The seemingly positive comments that Sally makes about the boy's teeth could lead a student to expect a modifier with positive meaning, such as admiringly. Grudgingly might here be misconstrued as such a positive term. The theme of smiling, teeth, and toothpaste commercials could lead a student to expect that the word strut concerns some activity centered around the mouth, such as grin. Thus, we believe that children are likely to receive incorrect impressions of the words grudgingly and strut from this context.

Another type of context does nothing to move children toward the meaning for a target word. These are nondirective contexts which use the word in such a way as to convey no sense at all of the word's meaning. The following example illustrates both a misdirective context (i.e., one that leads the child astray) and a nondirective context (i.e., one that provides no semantic clues.). In this instance, we present the text for two target words with blanks where the target words belong to highlight the direction of meaning provided by the context and to demonstrate the distinctions between the two nonhelpful categories of context.

An episode in a Houghton Mifflin story ("Arap Sang and the Cranes," Level K [4]) concerns an aged African demigod, Arap Sang, who is insulted by a vulture who calls him "Baldy":

> Arap Sang straightened himself up and his eyes flashed. . . . When he was angry, he could be rather a terrible old person. And he was very angry now.
>
> The really terrifying thing was that when he spoke, he didn't shout. . . . The words were clear and cold and hard. And all separate like hailstones.
>
> "Vulture," he said, "you're cruel and you're selfish. I shan't forget what you've said and you won't either. NOW GET OUT!"
>
> Arap Sang was so ____________ that Vulture got up ____________ly and flapped off. (p. 333 TM)

The target words with which the blanks should be completed and for which this passage is supposed to provide definitional clues are impressive in the first blank and awkwardly in the second.

The passage seems misdirective apropos impressive. Since Arap Sang's anger receives so much attention in the passage, it is likely that the student would assume that the target word would be one with angry connotations, such as one with the meaning of furious.

The passage provides no meaning clue apropos *awkwardly*. Any number of meanings could be inserted at this location in the passage. A few possibilities are *hurriedly*, *fearfully*, *insolently*, and *uncertainly*; all fit into the context provided. Since many diverse meanings can be suggested to fill in the blank, we consider the context nondirective.

Our third context category, the one we labeled general, approaches the positive side of the continuum. Such a context for the word *pralines* occurs in a fifth-grade Houghton Mifflin story ("The Cherub and My Sainted Grandmother," Level L [5]). In this story a grandmother gives advice to her granddaughter who is taming a pony:

> "Use love with your pony," she said. "I think he needs it." She put a neat package of *pralines* in my pocket and kissed me. (p. 10 TM)

From the context, it is easy to infer that *pralines* are something ponies like that comes in packages. The passage provides some general meaning clues, yet the specific characteristics of the target word remain undefined.

Our final category contains those contexts that include enough clues to direct a student to the specific meaning of a word. Such a directive context probably leads a student to the meaning of the word *stramash* in a fifth-grade Ginn story ("The Reluctant Dragon," Level 12 [5]). A dragon is explaining how he came to be stuck in a cave:

> I suppose the earth sneezed, or shook itself, or the bottom dropped out of something. Anyhow there was a shake and a roar and a general *stramash*, and I found myself miles away underground and wedged in as tight as tight. (p. 96 TM)

With clues such as "earth sneezed," "shook," "bottom dropped out," "shake," and "roar," the meaning of *stramash* is discernable: a disturbance or crash.

To "test" the validity of our context categories, we selected two stories from the Ginn program and we categorized each of the target words according to our context scheme. We then blacked out all parts of the target words except morphemes that were common prefixes or suffixes. Three adults were instructed to read each story and to try to fill in the blanks with the missing words or reasonable synonyms.

Table 6 shows the number of words in each context category and the mean number of words correctly identified by our subjects. The data clearly support the categorization system. The adults were able to supply a mean of 11 out of the 13 words we categorized as having directive contexts. Correct identification dropped sharply for the general context category and dropped even further for the nondirective category. Adults could identify no words at all in the misdirective category. By extension, this demonstration does show that it is precarious to believe that naturally occurring contexts are sufficient or even generally helpful in providing clues to promote initial acquisition of a word's meaning. The stories were written by professional authors who use "good" words to communicate. The stories were not developed for teaching the meaning of words.

Table 6

Adult Identification of Categorized Ginn Target Words

	Misdirective	Nondirective	General	Directive
Number of Words in Each Category	3	11	9	13
Mean Number Identified (N=3)	0	1	3 1/3	11

Both programs do include a glossary in the student's reader. In Houghton Mifflin, the glossary includes all target words; in Ginn, target words from the words for attention category are included. The glossaries are used to teach dictionary skills, and children are expected to refer to the glossary for meanings of unfamiliar words encountered in their reading selections. Unquestionably, knowing how to use a glossary or dictionary is a highly valuable skill. But we believe that expecting children to look up unfamiliar words as they are encountered during reading is questionable as a major strategy for teaching word meaning. Children read selections beyond third grade independently; they are therefore on their own to identify and look up unfamiliar words. Studies have shown that children have difficulty isolating words whose meanings they do not know (Anderson & Kulhavy, 1972; Harris & Sipay, 1975), so many children may be unlikely to recognize even the need to use a reference. Even if they identify an unknown word, it seems that only highly motivated students will choose to interrupt their reading to check on its meaning. We have informally questioned teachers who report that they rarely see their students refer to the glossary.

The result of the programs' reliance on context and independent use of the dictionary as methods of vocabulary instruction is likely to be wide variability in vocabulary development among students. Such variability may, in turn, serve to exacerbate differences between highly skilled and less skilled readers.

In the programs, after-reading activities are part of the skills development component of the directed reading lesson; they consist mostly of independently completed exercises. In Houghton Mifflin, after-reading activities introduce an entirely new set of words for instruction. No effort is made to provide instruction on the target words introduced in the stories. Thus, instead of presenting an opportunity to move words along the unknown to established progression, Houghton Mifflin gives the students another set of potentially unknown words.

In Ginn, after-reading activities in the vocabulary strand are at least oriented toward reinforcing target words. For each story lesson, instruction is provided after reading for the same set of target words found in the story. However, since these activities provide only one more encounter with the words, which then do not reappear on any regular basis in later reading selections, they represent only one small step in the direction of placing words in the established repertoire.

We conclude, then, that Houghton Mifflin fails dismally by making no attempt at all to reinforce the target words from the text in after-reading activities. Ginn moves in the right direction by providing some word maintenance activities, but it does not seem to provide enough to move target words to the established level of knowledge.

Summary and Conclusions

We will summarize the two programs' vocabulary instructional experiences and strategies in regard to the points we made at the beginning of this section concerning levels of vocabulary knowledge as applied to vocabulary instruction. Our first point was that instructional strategies should be supplied in intermediate grades reading programs for moving words from the unknown to the acquainted to the established levels of knowledge. Instruction for this purpose could occur at three traditional points in the reading lesson: prior to reading, during reading, and after reading.

According to this traditional progression of vocabulary instruction, a good time for moving words from the unknown to the acquainted level would likely be during activities that take place prior to reading. Houghton Mifflin, unfortunately, makes specifications for no pre-reading activities to provide the meanings of upcoming target words. Ginn, at least, through the use of pedagogical context sentences, does provide for the instruction in meaning of at least some target words in each selection through the sixth grade.

We have shown for both of our programs that during-reading vocabulary instructional activities rely on having students either infer the meaning of target words from natural language contexts or use a glossary to determine the meanings of target words. The strategy of inferring meaning from natural language texts is ineffective to the extent that such texts are often deficient in supplying meaning. Glossaries do provide the meanings of target words, but we speculate that they are also an ineffective instructional strategy since their use depends on students' own recognition of unfamiliar words and their motivation to search for the meanings of such words. We, therefore, conclude that the during-reading activities in both programs are not particularly helpful in advancing words along the unknown to acquainted to established progression.

In summary, vocabulary development during reading in both Ginn and Houghton Mifflin is supposed to occur by children inferring the meaning of unknown words through context or by looking up the unknown words in their glossaries. The contexts in which target words appear are natural contexts, not those manipulated to demonstrate the meaning of a word. As demonstrated, the contexts are often ineffective for promoting meaning. We believe that both programs have erred in relying heavily on these natural language texts to supply the meanings of new words. The glossary does not seem to be a reliable vehicle for promoting initial acquisition of new words; its use depends on students' independent recognition of unfamiliar words and on their motivation to seek out the meanings. In addition, pausing to look up unknown words during reading certainly interrupts textual processing and thereby runs the risk of interfering with rather than promoting comprehension.

After reading. Considering the minimal extent of vocabulary development instructional activities prescribed by both programs for the prior to reading and during reading periods, we judge that at best words could only have been moved from students' unknown to acquainted levels of knowledge. If they are developed well, after-reading activities can conceivably help to move words from the acquainted to established category. Various encounters, presented over time, which directly pair a target word with its meaning, are necessary to get the word into the established repertoire. After-reading activities can provide an opportunity for a variety of encounters aimed toward reinforcing and maintaining target words. Let us examine the Houghton Mifflin and Ginn after-reading activities to determine whether either program is successful in this respect.

After-reading activities could be helpful in moving words from the acquainted to established level if they were developed specifically to provide extensive reinforcement and maintenance of the lesson's target words. We found that the Houghton Mifflin after-reading activities presented a new set of unknown words, so they were not at all helpful in this respect. The Ginn after-reading activities did present one additional encounter with the target words.

There seems to be little doubt that by comparison, Ginn does a better job than does Houghton Mifflin in providing experiences and strategies to move target words along the unknown to acquainted to established progression. However, in our opinion, being relatively better is not good enough. There is still much room for improvement in that the frequency and variety of encounters with each target word should be increased for both pre- and post-reading instruction.

Vocabulary instruction is one of the areas we intend to explore in the empirical phase of our research. As mentioned in a previous section, it is one way to "chip away at the tip of the iceberg" of the background knowledge problem. Our work will involve enhancing the vocabulary instructional strategies found in Ginn to provide more numerous and instructionally varied opportunities for children to incorporate target words into their established repertoires.

Setting the Direction for Story Lesson Reading

In this section, we discuss a traditional element of the directed reading lesson, commonly termed "purpose" for reading. In the reading field at large and in both of the programs in particular, the "purpose" for reading is established by the teacher who follows the programs' specifications; it comprises a few introductory remarks to the students about the content of the story lesson to be read that day and also a guiding statement such as "read to find out . . ." or "you will find out . . ." that suggests some particular information that the student should be on the lookout for during reading. We have found the term "purpose" somewhat of a misnomer for this activity since the whole directed reading lesson is intended to establish and probe the purpose of reading the selection, not just the brief introductory remarks and guiding statement made by the teacher. We have chosen instead to rename "purpose" to "setting the direction for story lesson reading" or in shortened form "direction setting." The introductory remarks and guiding statement seem to us to be more precisely intended to get the student thinking along the direction that the story will take.

To illustrate more concretely the form of the direction-setting activity, let us examine one example from the Ginn program. For a story lesson text in which a farmer goes to the city to sleep in order to escape the constant noise made by his farm animals, the Ginn manual directs the teacher to:

> Tell the children that Mr. Big has a problem. Let them try to guess what the problem may be. . . . Suggest that they read the story with the purpose of finding out what Mr. Big's problem is and what he does to solve it. (Level 5 [1.2], p. 102 TM)

Note the presence of the introductory remarks (concerning Mr. Big's problem) and the guiding statement (to read to find out specifically about the problem and its solution). Both Ginn and Houghton Mifflin set the direction for story lesson reading by employing introductory remarks followed by a guiding statement.

In closely examining the direction-setting activity through the intermediate grades in both programs, we have distinguished many examples of what we believe to be three grades of quality of the activity: examples that we believe are likely to have a positive effect on the reader's comprehension of the text (the "good" direction-setting activities); examples that we think are likely to have little effect at all on comprehending the text (the "indifferent" direction-setting activities) which will be ignored here; and examples that we believe are likely to have a generally negative effect on reading behavior and, in turn, on comprehension (the "interfering" direction-setting activities). By identifying interfering direction-setting activities, we are concurring with a statement made by Frase (1977) that "purpose in reading may lead a reader to stray from, as well as move toward, desirable learning outcomes" (p. 43). In our case, the "desirable learning outcome" is, of course, good comprehension of the text.

In the remainder of this section, we will first present categories and instances of "interfering" direction-setting activities and the reasons we have adjudged them as likely to affect comprehension negatively. We will then identify "good" direction-setting activities and, even more importantly, the reasoning by which they were included in this category.

Interfering Direction-Setting Activities

Interfering direction-setting activities seem to err in establishing the appropriate framework for the reader in three different ways. In the first case, we found instances where the direction-setting activities actually set the reader off in what we consider to be the wrong direction; these misdirective activities seem likely to evoke inappropriate expectations in terms of what will be discovered later by reading the story. Secondly, we identified activities in which the direction may be right but the scope is too narrow considering the passage to be read. By this, we mean that the focus of the direction-setting activity is on only a small portion of text found at either the beginning or ending of the selection. Thirdly, we found direction-setting activities that in themselves give away pertinent information in the selection, information which we believe should be determined by reading. We will discuss each of these kinds of interfering direction-setting activities further.

Misdirective direction-setting activities. Suppose for a moment that you are in first grade and that you are getting ready to read a story entitled "One-Way Tickets," (Houghton Mifflin, Level D [1.1]). As a direction-setting activity, the teacher has asked members of the class what they think one-way tickets might be. Then s/he tells you that you will find the answer as you read the story. Imagine your growing bewilderment as you realize during the course of reading that the information sought is not included anywhere in the day's story lesson. This clearly is an example of a misdirective activity in which the reader is searching for missing information. We located instances of missing information in both reading programs.

Another kind of example of a misdirective activity involves a direction-setting activity that provides information that will later be established by the reader to be in conflict with the text. For example, as his/her introductory remarks, the teacher explains:

> King Chubby loved food so much that eventually he . . . became extremely fussy about it. None of the royal chefs prepared his food exactly as he liked it, so he was always firing one chef after another. (Ginn, Level 9 [3.2], p. 84 TM)

After beginning to read the story, however, it becomes clear that King Chubby never did actually fire a chef. He would provide them with suggestions for improving their cooking, and because of their pride, they would resign in a huff. Conflicting information direction-setting activities of this sort were found in both programs.

One last kind of misdirective activity is that which establishes a line of reasoning that, although not contradicted by the text, is out of keeping with its intent. For example, in a recapitulation of the fable of the tortoise and the hare, the teacher's manual directs the teacher to:

> Tell the children that in the story about Rabbit and Turtle they will discover that one of the animals was foolish and the other one was wise. . . . Ask them to find out what one animal did that was foolish and what the other animal did that was wise. (Ginn, Level 3 [1.1], p. 116 TM)

Now the fable of the tortoise and the hare is a parable of the value of persistence over bursts of superior ability. It may possibly contrast steadiness versus inconstancy, industry versus sloth, or perhaps even humility versus vanity; but it does not typify wisdom versus foolishness in its characters.

Whether coming from missing information, conflicting information, or misfocused information, all three of the above examples of direction-setting activities may misdirect the student to a line of thought that is not harmonious with the content of the reading selection itself. We hypothesize that the false expectations established in the reader by these misdirective activities may impede story comprehension in the sense that the reader will be searching the text for confirmation of his/her expectations and may, thereby, miss aspects of the story's actual intent. As Frase has indicated, "activities that involve . . . inappropriate content expectations . . . restrict the meaningful processing of text [and can] result . . . in unclear ideas" (1977, p. 44).

Direction-setting activities with narrow scope. The second type of problematic direction-setting activity is one that is too narrow in scope because it focuses upon only a small portion of the text at either the beginning or ending of a story. The activity therefore excludes most of the story's content from its focus. Some guiding statements focus on the beginning of a story and may be fulfilled by reading the first few lines of text: We have found such examples in both programs, in some of which the title alone provides the information requested by the guiding statement. It seems clear that these statements are insufficient both as motivational[9] as well as direction setting devices. For those guiding statements that focus on the end of the story, too many pages of text intervene between the posing of the guiding statement and the textual location of the information it requested.

One example (selected from the many available) of a direction-setting activity geared toward information contained at the end of a story comes from a selection about an old African woman who is driven from village to village because she is believed to be a witch responsible for widespread floods. Near the conclusion of the story, the woman teaches the art of rainmaking to a villager, Mugimba, who treats her with courtesy in contrast to the treatment to which she is accustomed. The guiding statement for this story has been to "find out how Mugimba learned the art of rainmaking" (Houghton Mifflin, Level M [6], p. 163 TM). Mugimba, however, does not even enter the story until the ninth page of the twelve-page selection, let alone learn how to make rain. Frase has noted that "the effects of questions are diminished when they are placed some distance from the relevant text content" (1977, p. 48).

---

[9] In this context, a motivational device is an external stimulus that activates an internal desire to read the selection.

We would like to extend Frase's statement and postulate the following: The lessened effect of the guiding statement may not be the only consequence of the relatively great distance between the statement and its textual application. It is also possible that comprehension of the intervening text itself is reduced if the text is being searched by the reader to fulfill the condition set up by the guiding statement. In support of our speculation, Guthrie (1977) has said, "Purpose plays a selective role, increasing the learning of information within the focus and decreasing learning of information outside the focus" (p. 287). Anderson and Biddle (1975) and Frase (1977) have also indicated that activities that direct children to small portions of a story may improve the recollection of that part of the text but will result in poorer retention of the overall selection. With such research as support, we conclude that a direction-setting activity containing a too narrow focus may unnecessarily delimit the reader's comprehension of the entire text.

Giveaway direction-setting activities. Giveaway direction-setting activities are so termed because we believe they divulge too much of the textual content of the reading selection. While giveaway activities do indeed set the reader off in the right direction concerning the story situation, they often take him or her through the whole journey.

As an example, a direction-setting activity that gives away a major part of the textual content occurs in a story about two girls who decide to trade names and lives (Houghton Mifflin, "Gabrielle and Selena," Level G [2. 1]). The story is divided into two story lessons, with the first story lesson devoted to the girls comparing their respective lifestyles, each admiring the other's, and culminating in their switching identities. The teacher's introductory statement for this story lesson begins with a discussion of routine as it exists in everyone's life:

> There are certain things we all do most every day. We get up and have breakfast and go to the same school and see the same people we saw yesterday, and so forth. What are some other things that you do and see day after day? . . . Have you ever thought you'd like to do things differently? . . . Have you ever wished that you could be someone else?
>
> Today you will be reading a story about two friends. One of the friends got tired of doing the same things every day. She thought it would be more interesting to live at her friend's house and do the things her friend did. (p. 341 TM)

We believe that this introductory statement gives away a major and highly interesting element of the story: the identity switch. By giving away key concepts about a selection or a major portion of the story content, it appears that the direction-setting activity here supplants the reading role.

General conclusions on the interfering direction-setting activities. We have thus far in this section discussed direction-setting activities that may inhibit comprehension for varying reasons. It will be helpful here to break the activity into its two component parts, the introductory remarks and the guiding statement, and to attribute to each part its major weakness.

In general, the activities seem to go astray for one of these two reasons: First, they rely too heavily on information-gathering specifications that may focus the reader's attention on severely limited and possibly noncritical story elements. The guiding statement is the more vulnerable of the two component parts in this respect. The very format of specifying a piece of particular information to be acquired through reading is delimiting since children can be told to "read to find out . . . " only a small amount of information at one time. Second, they set the reader off along the wrong path of reasoning or they set him/her off along the right track but then go on to provide excessive information and give away the story. In this respect, the introductory statement seems the more guilty, but examples have also been cited in which the guiding statement also is culpable.

It follows from these conclusions that a good direction-setting activity would activate the correct context in which to view the story. It also follows that the guiding statements should be watched carefully; they should either be formulated in more general terms or possibly be omitted entirely. Let us move now to examine the good direction-setting activities.

A Framework for Identifying Good Direction-Setting Activities

In the view of Frase (1977), "a purpose in reading gives rise to unique perceptions, memories, and understandings [which can] influence learning" (p. 42). We believe along with Frase that the direction-setting activities should prepare children to construct the meaning of a text by evoking a network of relevant associations. Instead of being designed to elicit one or two bits of information,[10] the direction-setting activities should provide a framework for the organization of events and concepts in the text so that many aspects of the text become interrelated and, thus, more memorable. In attempting to identify the key ingredient of the direction-setting activity which would further these objectives, we have found the notions of Anderson (1977) and others about schemata very helpful.

---

[10] We must make a distinction here between the beginning reading lessons of the first grade and those that follow as reading becomes more skilled. In the earliest lessons, children are just becoming aware that meaning can be constructed from print. We believe that during this time period, a few introductory comments to introduce a selection and the simple direction to "read to find out . . ." may indeed be the best means to convey the notion that meaning can be constructed from print and to provide practice in doing so.

Schemata, which have variously been called _scripts_, _frames_, or _plans_, are ideational superstructures into which concepts can be incorporated to delineate their interrelationships. Anderson specifically indicates that a schema is a framework for ideas that can be thought of as containing "slots" to be filled.

In an experiment by Anderson and Pichert (1977), subjects were given one of two perspectives prior to reading the same textual passage. One group was alerted to read the passage from the perspective of a potential house buyer; the other group was told to read the passage from the view of a potential burglar. On an immediate recall test, subjects with the house-buying perspective remembered such details as the condition of the roof and basement. Subjects with the burgling schema remembered details such as unlocked doors and the location of valuable items. Thus, certain elements of the text assumed importance because of the predesignated schemata which provided an organizational frame for the subjects' recall. In Anderson's words, schemata are useful for "directing attention to text elements that are significant in light of the schema" (1977, p. 22).

Accordingly, as we have been alluding all along by saying that the direction-setting activity should appropriately orient the reader, we recommend that the direction-setting activity be formulated in terms of schematic design. We think that a schema promoting a network of ideas relevant to the content of a text might take a direction-setting activity from an information-gathering directive eliciting one or a few details and transform it into a plan for attention in reading that would help children to identify, interrelate, and remember important story elements. However, we caution that the schema to be activated for a particular story may not always be clear-cut. The selection of the schema should be determined by what the program developer believes to be the most meaningful associations to activate.

A good (but not quite good enough) direction-setting activity. As was just mentioned, implicit in our notions about schema is the assumption that the schema that is evoked will be appropriate and, indeed, central to the story at hand. The adoption of just any schematic format will not necessarily circumvent all the potential problems of direction-setting activities as we have outlined them in preceding portions of this section; the appropriateness of a schema is highly dependent upon story content.

For example, the direction-setting activity for one Houghton Mifflin story seems to evoke an appropriate schema and an inappropriate one as well. The story concerns a princess who rescues a prince from a magician only to find that the prince is a bore; she marries the magician in his stead ("Petronella," Level J [3.2]). Comprehension of this story depends upon a series of reversals of traditional fairy tale constructs, e.g., princess rescuing prince, magician being heroic, etc. To prepare the children for reading, the teacher says:

> Today you are going to read the first part of a story about a royal kingdom, a princess, and a prince. You have probably read many stories called fairy tales that were about the usual kingdoms, princesses, and princes. What usually happened in these stories? . . . Allow for discussion.
>
> Encourage students to verbalize the "standard" plot--prince rescues princess from impending disaster and they return to the prince's kingdom to live and rule. The story you will read today . . . has all the magic, travel, and brave deeds of the fairy tales everyone knows. But [this story] is not what you expect. Often, when something is done in a different way, . . . it is up-to-date, or new, or modern. [This] is a modern fairy tale. (p. 220 TM)

The attempt to activate the schema of the traditional fairy tale construct seems to us wholly appropriate. We think students should first be thinking about what "normally" happens in fairy tales. The second notion alerts the students to be prepared for a "curve," that is, to anticipate something unexpected. With this alert, the reversals in this story may become apparent and the humor of the story may well be recognized. However, we believe that the last few lines of the introduction may distract the reader from the good job just done in setting up the appropriate schema. The explanation of modern seems inaccurate, for what is unexpected is not necessarily modern. Even more relevant to the point, we believe that if the third grader has a "modern" schema at all, jet planes and outer space, etc., are more likely the images to be activated.

A good direction-setting activity. Our "best" example illustrates a direction-setting activity that we believe activates the single most important schema in light of the story to follow. The story concerns a schoolgirl who successively convinces a male companion that she can be a doctor, a pilot, or a president, and that her job possibilities are not determined by her sex (Houghton Mifflin, "Girls Can Be Anything," Level G [2.1]). To introduce this story, the teacher says:

> How many of you think that you know just what jobs you want to have someday? . . . Let's hear about some of these jobs. . . . Following these responses, go around the group asking pupils the questions, "How would you like to be a _______? Why or why not?" Ask the girls about occupations that have often been associated with boys--pilot, firefighter, police officer, football coach, engineer, dentist, farmer, etc. Ask the boys about occupations that have often been associated with girls--nurse, kindergarten teacher, nursery school teacher, baby sitter, secretary, dietitian, etc. Through questioning and discussion, guide them to arrive at the conclusion--or to begin thinking in the direction--that there are really no valid reasons why a boy can't be a nurse or a girl can't be a pilot, provided that each is trained or prepared or educated for the job.
>
> In today's story, you're going to read about a boy and a girl who have some disagreements. You'll find out what those disagreements are and how they are settled. (p. 127 TM)

The discussion of jobs and of the possibility of not falling into de facto sexually determined job roles may indeed provide the children with an orientation that will help them to read the story with understanding.

In the two examples just cited as good, the schematically oriented direction-setting activities for reading differ from the earlier cited information-gathering types in that they are more concerned with setting children thinking in ways that will help them to understand stories than in specifying a particular story element to be located and remembered. In each case, an idea central to the story content is discussed prior to reading so that children will have an appropriate and specific frame of reference for reading and understanding the selection. To us, the crucial element of the direction-setting activity is an orientation or ideational framework that prepares a child to recognize important story elements as they are encountered and to relate them to each other under some larger design.

Summary and Recommendations

In this section, we have focused upon the direction-setting activity component of the directed reading lesson. We have identified direction-setting activities that we believe may interfere with comprehension (misdirective, narrowly scoped, and giveaway activities) and we have explored our reasons for this negative judgment. We have also isolated direction-setting activities that seem to be facilitative of comprehension and we have viewed them in light of a framework for evaluating the activities.

In contrast to the conventional format for a direction-setting activity, that of providing a few introductory remarks followed by a guiding statement to "read to find out" some specific information, we proposed a schematic approach that provides a perspective for understanding the story. The guiding statement seems unnecessary in all but the earlier levels since the specification of a particular bit of information to be learned during reading may be unnecessarily delimiting. If the guiding statement is retained, it should be couched in somewhat general terms.

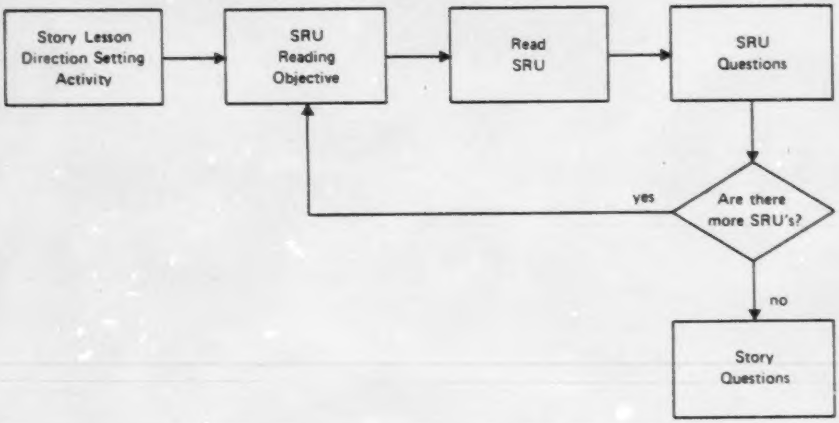
As further work to determine if our speculations that appropriate schemata might enhance comprehension hold true, an experiment might be designed in which some students receive a direction-setting activity, which is lacking in schematic design, taken directly from one of the reading programs. Other students, matched in characteristics to the first group, would receive a direction-setting activity that we have designed to maximize the chances of activating what we believe to be a good schema in which to view the story. Both groups of students would then silently read the story lesson as presented in the reader. An immediate free-recall test would determine whether the schema-directed students would indeed be more likely to remember the salient features of the story.

We are aware, however, that there is no formulaic approach to the development of an appropriate schema. The best attentional framework for a selection clearly depends upon the content and structure of each individual reading selection.

Divisions Within a Story Lesson

In the previous section of this paper, we discussed the direction-setting activity that precedes the reading of a story lesson. In this section, we will discuss another activity that in the primary grades also precedes story reading. In the primary grades, prior to reading each SRU (Silent Reading Unit), the teacher provides an introduction to the SRU in the form of a reading objective. These reading objectives are specified by the teacher's manuals of both programs.

Figure 2 is presented in order to clarify the ordering of activities centered on story reading in the primary grades.



Story Lesson Direction Setting Activity
SRU Reading Objective
Read SRU
SRU Questions
Are there more SRU's?
yes
no
Story Questions

Figure 2. Sequence of story reading activities in the primary grades.

As can be seen in Figure 2, the SRU reading objective for the first SRU in the story lesson directly follows the lesson's direction-setting activity. Students then read the SRU and answer questions on its content. Preceding the reading of the next SRU of the lesson is another SRU reading objective, etc., until all SRU's for the lesson are completed. In this section of our report, we will concern ourselves with the function of the SRU reading objective. The next section will discuss SRU and story questioning strategies.

One additional point must be made before initiating our discussion of the function of SRU objectives, however. In certain cases, the way in which story lessons are divided into SRU's seems to create reading units that are illogical in light of the content of the whole text.

Accordingly, we begin with some problematic aspects of text division that we have noted.

SRU Divisions: A Potentially Confounding Variable

In reviewing the primary grades stories of both programs, we found a number of instances where very little attention seemed to be paid to the suitability of a stopping point in terms of the sequences of events described in the text. We think that cutting an SRU at an inappropriate point in a story episode might impede comprehension in much the same way that inappropriate paragraphing or punctuation might disrupt a more mature reader's processing. An inappropriately indicated pause could cause a mature reader to stop processing one idea in preparation for the presentation of a new concept. When the discourse unexpectedly continues in the same vein as before the pause indicator, comprehension may suffer because of the interruption. We speculate that interruptions in a child's reading caused by an inappropriately terminated SRU could be detrimental to story comprehension to an even greater degree than interruptions would be to an adult reader. Children are just developing many of the reading skills already possessed and polished in the mature reader. In addition, the pause between the ending of one SRU and the beginning of the next can be as long as several minutes, allowing time for the teacher to question the content of the just-completed SRU. We believe that it can be quite taxing for a beginning reader to have to hold in mind for this length of time a story that may lack coherence because of its artificial division.

An example of a case in which beginning readers are interrupted at an inappropriate point in a story is drawn from a Houghton Mifflin story about children at a park ("One-Way Tickets," Level D [1.1]). In the example, a conversation is interrupted by SRU division, resulting in one character's statement being separated from another character's retort. Specifically, the first SRU of the story is demarcated as a one-page text. On this page, a girl, Ann, sees a park amusement and expresses her desire to ride on it. To supercede their father's objections, her brother, Mike, offers to supervise Ann on the ride with the help of another brother, Ted.

> Mike: Ted and I will go.
> And Ann can go with us.
> We can look after Ann. (p. 137 TM)

At this point, children stop reading for an interval of questioning about the content of the page. After questioning, the next SRU begins with Ann's retort to her brother's statement: "You don't have to look after me" (p. 139 TM).

It appears to us that the separation of Ann's response from Mike's comment is likely to increase any difficulties children may have in processing this part of the text. That Ann's response is contained in the next SRU on the next page is particularly illogical since her statement is unrelated to the remaining text on that page; the dialogue continues as Father distributes the ride tickets and the children embark on the ride. In story grammar terminology (Stein & Glenn, in press), Mike's offer to care for Ann might be seen as an ATTEMPT (an effort to reach a goal) or a plan to resolve the potential conflict foreseen as Father's objection. Ann's retort is a REACTION to Mike's ATTEMPT. Because of the close, virtually causal relationship between Mike's offer and Ann's response, the two story elements should not be interrupted by an interval of questioning, as occurs between SRU divisions.

The easiest way to ameliorate the problematic SRU division in this example would be to change the page layout of the story. Ann's line of text could be moved to the preceding page and, hence, be included in the SRU containing Mike's offer. This would permit the second SRU to begin with Father's distribution of tickets for the ride, an INITIATING EVENT for a new episode; this would structurally be a well-devised starting point for the second SRU.

In the preceding example, the problem of the inappropriate stopping point seemed to be caused by inappropriate layout of the printed text on story pages: The appropriate stopping point was not found at the end of a printed page. Our next example illustrates that even when a logical stopping point coincides with the end of a page, such natural breaking points are not always identified and used to advantage by program developers in marking off SRU's.

A story from the Ginn series concerns three girls who befriend a new girl on the block ("The Clover Street Trio," Level 7 [2.2]). On the first page of the story, the three girls, their street, and some of their activities are described. On page two, further descriptions of their activities occur. The third story page begins by introducing the new girl on the block. These three pages constitute two SRU's. Contrary to what one might logically expect, however, the first two pages of the story, which provide background on the trio, do not form the first SRU. Instead, the first page of the story alone is designated as the first SRU. The second page, which continues to provide descriptions of the girls' activities, is included with the third page, which introduces the new character, as the second SRU. This appears to us to be an inappropriate SRU division since the background information about the activities of the trio is split in half. In addition, the third page would be an ideal starting point for beginning the second SRU since the presentation of a new character marks a shift in focus in the progression of the narrative. The program developers thus do not seem to heed the logical stopping points in the text.

In story grammar terminology, the first and second pages of the story provide a SETTING STATEMENT. The beginning of the third page introduces a change in the story environment, an INITIATING EVENT which sets in motion the rest of the action of the episode. It seems sensible that the entire SETTING STATEMENT--the first two story pages--should be read as a unit before children are interrupted for questioning at the end of the first SRU. The third page, introducing the new story character, is the logical starting point for the beginning of the second SRU.

When narratives are to be divided into smaller SRU portions, it would seem wise to accomplish the division in accordance with a plan that takes into account the sequences of events that are described in the stories. We suggest that story grammars provide some helpful constructs for identifying appropriate breaking points. Applying constructs on episodic structure may emphasize the unified nature of the episodes and may thus help to promote story comprehension and recall.

Having observed that the current state of SRU divisions in Ginn and Houghton Mifflin may provide some obstacles for story comprehension, and having suggested a way to circumvent this potential problem, let us now move to the main focus of this section, the function of the SRU reading objective.

SRU Reading Objective: What Function Should It Assume?

The SRU reading objective is similar in format to the guiding statement contained in the story lesson's direction-setting activity; i.e., it usually consists of a specific "read to find out . . ." directive. Houghton Mifflin states that the SRU reading objectives are "for use in setting a purpose for reading" (Level E [1.2], p. I-39 TM). Ginn merely indicates that such objectives "promote comprehension" (Level 5 [1.2], p. T23 TM).

In our view, the SRU reading objective can possibly serve three functions:

1. It can serve as a "starter" device to move children into the story text. For all SRU's after the first, the SRU reading objective can reorient the children to the story so that they are prepared to resume reading after having been interrupted by a period of questioning.

2. It can alert the children to what will be the salient information in the upcoming text. If cued in advance, children are more apt to focus upon the crucial concepts conveyed by the text.

3. It can be used as a contingency to promote completion of the assigned reading; that is, to help assure that children stay on task as they read to the end of an SRU.

However, it seems to us that it would be difficult to formulate an SRU reading objective that fulfills all three of the possible functions identified above. When a reading objective serves one or two of the functions adequately, it may work against the intent of the remaining function(s).

Following are two examples of SRU reading objectives that serve well one of the functions we have outlined. As we indicate, the very nature of performing one of the functions adequately may work against the reading objective's chances of serving the other functions well. In our first example, the SRU reading objective acts as a starter device.

The example is drawn from a story in the Ginn program about a boy whose brownstone house is falling prey to urban renewal ("Lost and Found Department," Level 7 [2.2]). The beginning of the story introduces the boy, William, and his dog, Chips. The reading objective of the second SRU, a three-page unit, is to "find out what is about to happen to the brownstone house" (p. 162 TM). This information is supplied in the first sentence of the SRU: "And now the last of the brownstone houses in the block would be torn down, and there would be a big apartment house where the old brownstones had been" (p. 163 TM). This SRU reading objective fulfills the starter function, that of orienting the children to the part of the text in which they begin reading. However, by the very nature of confining itself to the opening lines of the SRU, it fails in both of the other possible functions. It does not highlight many of the concepts in the upcoming SRU that will be important for story development. Nor does it motivate children to complete the reading of the SRU.

In terms of important story concepts, this SRU contains the major conflict around which the story revolves: Since their brownstone is being torn down, William's family must move. They could move to a nearby building, but their dog, Chips, would not be welcome there. William decides that he may be able to convince the landlady to accept Chips if the dog can perform a special service for the landlady. He puts Chips to work finding lost objects. Clearly, children's attention is not drawn to this evolving plot line through the SRU reading objective. The contingency for completion function is also unfulfilled since the information elicited by the reading objective is available at the very beginning of the SRU.

The next example shows an SRU reading objective that may serve to promote reading to the end of the unit. The example is drawn from a first-grade Houghton Mifflin story about Nate, a boy detective ("Nate the Great," Level F [1.2]). As the story begins, Nate is attempting to find a missing picture painted by his client, Annie. The picture is of Fang, Annie's dog; one of Nate's theories is that Fang may have buried the picture in Annie's yard. The next SRU, upon which we will focus, consists of four pages. On the first two pages, Annie and Nate dig in Annie's yard searching for the lost picture; then they give up and proceed to Annie's kitchen to eat pancakes. A new character, Rosamond, is introduced on the third page when Annie and Nate visit her in their continuing quest for the missing picture. The SRU ends after Rosamond asks Nate to prove he is a detective by finding her lost cat.[11]

---

[11] The reader may have noted correctly that this SRU is another example of the kind cited earlier in this section in which the SRU has not been apportioned according to the episodic structure of the story.

The reading objective for this SRU has been to: "Read these pages to . . . find out what Rosamond told Nate to do" (p. 390 TM). Since the information elicited occurs at the very end of the SRU, the reading objective may serve as a contingency to complete the assigned reading. It does not serve either of the other proposed functions, however. Regarding the starter function, we believe in fact that this reading objective is more likely to disorient children than to ease them back into the text. The SRU begins with Nate and Annie digging in the yard; Rosamond has not yet even been introduced into the story. It may be disconcerting for children as they hear an unfamiliar name in the SRU reading objective. The reading objective does not focus on key story information either, as Rosamond's request to find her cat is really an aside to the "case" at hand.

Thus, it seems to happen more often than not that a reading objective geared toward promoting completion of reading would differ from one that would best serve as a starter device and would also differ from one designed to preview upcoming story information. SRU reading objectives do not serve in a uniform way to promote comprehension or to motivate reading. Since SRU reading objectives can direct attention in different directions, it seems that program developers should be alert to the way in which an SRU reading objective manipulates children's attention. Developers should choose the function of the reading objective most suited to their intentions and they should carefully orient the reading objective to fulfill that function.

In our view, an SRU reading objective can best serve as a starter device. This is not to say that there are not valid reasons for the other two functions we have discussed. However, the functions of flagging key story concepts and of motivating students to complete the reading assignment can be fulfilled at another time; they can be accomplished through post-reading questions. Questions can check on whether children have understood key story points and highlight their importance in the story. A routine of post-reading questioning can also encourage children to finish the reading assignment to be prepared to discuss the text.

The starter function thus seems most critical to us in the time directly preceding the reading of the SRU. Since the interruptions in reading that occur between SRU's break up the flow of a story, they could conveivably be a hindrance to comprehension if some provision is not made to ease children back into the progression of the story. After a period of questioning, it seems in the best interest of children's comprehension to provide a reading objective for the next SRU that will reorient children to the text by preparing them for the point at which reading resumes.

In recommending that SRU reading objectives be geared toward the starter function, we do recognize, however, that certain story content or the needs of particular children may require that attention be drawn at certain times to elements of a story other than those at the beginning of an SRU. In these cases, it would be well-advised to employ the SRU reading objective to fulfill the function deemed as most important.

Summary

This discussion has focused on some issues pertinent to comprehension which center on the practice in the primary grades of having children read short portions of the text which are preceded by an introduction in the form of a reading objective. Our main concerns here have been the ways in which stories are divided into SRU's and the functions of the reading objectives which are provided prior to each SRU.

Regarding the division of stories, we found examples in which reading was interrupted at an inappropriate point in the story, such as in the middle of an action or conversation. We speculated that such inappropriate stopping points could disrupt children's perception of story coherence: we suggested that story grammar notions be used to identify appropriate SRU divisions.

We then discussed possible functions of the SRU reading objectives. We identified three ways in which the reading objectives could function: (a) as a starter device to ease children back into the story after a period of questioning; (b) as a device to alert children to key ideas in the upcoming text; and (c) as a contingency device to promote reading of the entire SRU. It was our perception that SRU reading objectives cannot easily be designed to fulfill all three of these functions since in many cases a reading objective that fulfills one function may work against another. We then presented our view of the starter device as the most beneficial function for an SRU reading objective. In our view, SRU objectives could best serve to bridge the gaps created by breaks in reading by preparing children for the point in the text at which reading resumes. Though the other two functions we identified are valid as well, they could be fulfilled by post-reading questions.

After-Reading Questioning

We now turn to a consideration of questions asked in conjunction with story reading. Questioning students on what they have read is the most extensively used form of comprehension guidance. Conventional wisdom would indicate that questions are asked for two purposes. First, because comprehension occurs inside the head and cannot be observed, teachers ask questions to determine whether students have understood the text; that is, questions can function as a measure of comprehension. Second, questions are seen as an aid to the development of comprehension if it does not take place spontaneously during reading; that is, they can function as post-hoc probes for organizing and integrating story content. It is this latter function of questions with which we will be concerned.

Since after-reading questioning is such a prevalent instructional practice, it has received much attention in the literature. The study of questions generally revolves around taxonomic notions of comprehension, i.e., that there are several levels of comprehension, from low to high or simple to complex. Several such taxonomies of reading comprehension exist which, though they may vary in the names and the numbers of levels of comprehension, are quite similar in overall design. (See, for example, Barrett, 1967; Herber, 1970; Ruddell & Bacon, 1972; Sanders, 1966.) Barrett's taxonomy, probably the most frequently referenced taxonomy in the reading instruction literature, contains the following major categories: (a) Literal Comprehension, (b) Reorganization, (c) Inferential Comprehension, (d) Evaluation, and (e) Appreciation.

Numerous studies have analyzed after-reading questions from basal readers in terms of taxonomic structure. (See, for example, Bartolome, 1968; Cooke, 1970; Guszak, 1967; Rosecky, 1976.) Included in the results of these studies was the finding that about half of the questions analyzed were of the literal comprehension type, requiring only recall or recognition of story facts. The most often cited recommendation from such studies is that more attention to given to higher levels of comprehension, i.e., questions that elicit inferences, evaluation, and appreciation.

Our early attempts to examine questions in the Houghton Mifflin and Ginn programs pursued a categorization scheme similar in many respects to the taxonomic classifications. An important difference was that we regarded our organization of questions not in terms of low to high levels of comprehension, but in order of their dependence on the text. In this way, we could speculate about the processing demands required by particular types of questions. Questions in our system ranged from those that were highly dependent on the text, i.e., whose answers were explicitly contained in the text, to those that were only tenuously related to the text, i. e., whose answers depended almost completely on general knowledge rather than text ideas.

Our organization was motivated by the notion that comprehension of a text is developed by children's interaction with text information. This essential idea is not acknowledged in taxonomies of comprehension. Questions from higher levels of the taxonomies, those considered to be "better" in the taxonomic view, do not necessarily require greater interaction with text information. For example, a question asking children to identify with a story character--"How would you feel if you had been Goldilocks?"--would be an Appreciation question in Barrett's terms, the highest category on the taxonomy. Yet a response to such a question would probably require less reliance on text information than a question that required a summary or synthesis of story events, which would be included in the second level of the taxonomy.

As a result of our question categorization using the Houghton Mifflin and Ginn programs, we learned the proportion of questions depending on explicit text information, the proportion requiring general knowledge, etc. Taken alone, this information was not uninteresting. But we discovered that it provided scant help in determining how to evaluate questions in terms of their effectiveness in promoting comprehension of a text. Despite our efforts to differentiate our system from the comprehension taxonomies by organizing questions according to their relatedness to the text, our categorization system still exhibited the same major flaw as did the taxonomies: the assumption that question effectiveness for comprehension is independent of the particular textual content being questioned. All questions contained in any one category were seen as having an equal role in promoting comprehension. This is clearly untrue. For example, a question eliciting an explicit story fact may be relevant to comprehension if the story fact represents a central story idea; yet the same type of question would be irrelevant to comprehension if the story fact elicited has no bearing on story development.

The weakness of our initial question categorization scheme led us to believe that questions cannot be evaluated as "good" or "poor" for promoting comprehension unless we know the role of the information tapped by the question within the story framework. The importance of knowing the role of the information tapped by questions was emphasized by Kintsch and Vipond (1978) in discussing the usefulness of questions in measuring comprehension; we think this notion applies to promoting comprehension as well.

A Construct for Relating Questioning to Story Comprehension: The Story Map

Through an extension of Kintsch and Vipond's notion, we were able to describe how we believe that questions should function to best promote comprehension of the story. Our view is quite simple. First, questions should tap information that is central to story development. But it is not enough for questions solely to elicit discrete bits of important story content. Questions for a story should be generated with the aim of promoting the development of a unified conception of the story, which we will call a map of the story. Any coherent story map must interweave explicit and implicit story concepts. Here we register our concern with the tendency in the education establishment to structure questions according to taxonomic notions to the extent that question sequences begin by eliciting a "literal" recitation of a story without acknowledging that a basic understanding of what is read requires that inferences be drawn. Questioning in an attempt to develop a story map does recognize the importance of making certain inferences as well as recalling explicit story events.

To promote the development of a story map, information elicited by each question should build on what has preceded. There are two notions here. First, questions should proceed in a sequence that matches the progression of ideas or of events in the story. Second, questions should be framed to highlight the interrelationship of story ideas.

After a story map has been established through questioning and discussion, additional questions can then appropriately extend discussion to broader perspectives. Text extension questions could develop a story interpretation, explore a general theme or lesson embodied in the story, probe the use of literary conventions within the story, or act to further extend the text by using story ideas as a springboard for more general discussion. In our view, the extension of text ideas can enhance comprehension of a story _if_ a map of the story has already been developed; story extension questioning, however, cannot substitute for the development of a story map.

We now move to an examination of after-reading questions in the two programs. We first focus on primary grades after-reading questions and then on intermediate grades questions. We will consider the two programs' questioning strategies in terms of their effectiveness in developing story maps followed by appropriate extension activities.

Primary Grades Questions

In the primary grades, two sets of after-reading questions are provided in each program. In the first three grades, in which stories are divided into smaller reading segments called Silent Reading Units (SRU's), a set of questions about the content of each SRU is provided for use after the reading of that SRU. We will discuss this set of questions as SRU Questions. In addition to these sets of questions, another set of questions, related to the entire selection, is provided at the end of each selection. We will discuss this set of questions as Story Questions.

Characteristics and functions of SRU questions. The SRU Questions in Houghton Mifflin and Ginn exhibit quite different characteristics. Houghton Mifflin provides an extensive list of questions for each SRU, while Ginn's questioning is usually brief. A large majority of the Houghton Mifflin questions can be answered by information that is explicitly contained in the text. Nearly half of these explicit questions require oral reading of text sentences rather than recall. Ginn's questions are about evenly divided between questions that can be answered directly from the text and those that require inference, conjecture, or outside knowledge.[12]

The program developers' own descriptions of how their SRU Questions function are also quite different from one another. The Ginn developers, on one hand, offer the global statement that SRU Questions are "designed to promote comprehension" (Level 5 [1.2], p. T23 TM). The Houghton Mifflin developers, on the other hand, specifically identify four types of questions that occur in each SRU Question set. First, questions check on the fulfillment of the assigned guiding statement for reading. Next, oral reading questions are to "insure that all students know what was said on the page." Third, questions check on the decoding of new words. Fourth, questions elicit predictions about what will happen next, toward "motivating students to continue . . . the story" (Level H [2.2], p. I-29 TM). Having presented the functions of SRU Questions as described in the programs, we now offer our own view.

Our view of the function of SRU Questions stems from the seemingly obvious notion that the student's primary objective in reading should be to gain a basic understanding of what a story is about. As noted earlier, we have characterized this basic understanding as a story map, a unified conception of a story formed from explicit and implicit text information. Here we again stress the essential role of implied information in basic story comprehension, and we provide a brief illustration of our point: The example is drawn from a story about a troublesome ghost who harasses a family until they attempt to move to another house to escape his mischief (Ginn, "Here We Go," Level 7 [2.2]). At the conclusion of the story, the family is riding away from their haunted house in a wagon filled with their belongings; then, from the top of the load, a spectral voice says "Well, here we go! We're off!" (p. 273 TM). A discussion of explicit story information would involve the voice and its comment, but the implicit connection that the voice belongs to the ghost, and that he is accompanying the family on their move is required for comprehension of the story. Thus, these implicit notions should be questioned to facilitate the development of a story map.

---

[12] This information is drawn from our earlier analysis of questions which was discussed at the beginning of this section. The source of the data referred to here was a sample of every third fiction story from the first three grades of each program.

Since SRU Questions are the first questions encountered during story reading, we believe that their objective should be to help children develop a map of the story as they read. If a map of each SRU is developed prior to continuing to read, the student will enter the next segment of text with the relevant prerequisites for comprehension having been established.

In our review of SRU Questions in the two programs, we frequently found that the questions did not lead to the development of a story map. We now turn to examples of such problematic SRU Questions.

Problematic aspects of SRU questioning strategies. In the following examples, the reasons that questions fail to promote the development of a story map will be discussed in terms of the content of questions (what is asked) and the sequence of questions (the order in which questions are asked).

Our first example demonstrates a problem in question content. In the question set to be considered, neither the main action of the SRU nor an inference crucial to the development of a story map is questioned. Instead, conjecture questions, which elicit ideas that are not founded on the main action of the story, are provided.

The story, drawn from the Ginn program, concerns a footloose monkey, Carlo, who goes to the park alone while his master, Mr. Bell, is asleep ("Carlo," Level 5 [1.2]). The teacher guidance for the prereading discussion establishes that Carlo is a monkey who runs away, but does not indicate the identity of Mr. Bell. The first SRU consists of the first page of the story. A picture shows Carlo standing on a city street, and the text is as follows:

> Carlo looked down the street.
> He said, "Mr. Bell is sleeping.
> I'm going to the park.
> Mr. Bell is in bed,
> and he can't stop me." (p. 113 TM)

The SRU Questions for this page of text are:

> How did Carlo get out of the house?
> Where do you suppose Mr. Bell is?
> Why do you think Carlo wants to run away? (p. 113 TM)

The main action of this page, which is the starting premise needed for a map of the story, is that Carlo, the monkey, goes off to the park alone while his master is asleep. Implicit in this premise is the understanding that Mr. Bell is Carlo's master. Neither of these main points is questioned after the SRU is read. Two of the three questions asked are speculative, and their responses cannot be supported by any information contained in the text. It would be legitmate to develop conjectures about how Carlo got out of the house and his reasons for going if they would later prove relevant to understanding the story. As the selection continues, Carlo goes to the park creating havoc along the way; he misses Mr. Bell once he is there, and he is happy to return home when Mr. Bell finds him in the park. How Carlo got out of the house or why he left are never crucial to the development of a story map.

Thus, it would appear that the questions provided about this SRU have been haphazardly generated; critical questions for developing a story map are omitted, and noncritical questions are provided.

Though problems of question content were found in both programs, the reasons that question content did not contribute to the development of a story map were traceable to different sources, i. e., the particular questioning characteristics of each program. Content problems in Ginn arise because questions typically elicit ideas beyond those contained either explicitly or implicitly in the text. In Houghton Mifflin, however, the typical strategy of eliciting "what was said on the page" (Level H [2.2], p. I-29 TM) checks on children's ability to read the words on the page, but may not necessarily insure that children understand that information in terms of the story. To illustrate this point, here is a brief example from Houghton Mifflin. The story concerns a frog and a toad who find it difficult to stop themselves from gorging on cookies ("Cookies," Level E [1.2]). Frog declares that they need will power and, after explaining "will power" to Toad, puts the cookies in a box. The SRU then concludes:

> "There," he said.
> "Now we will not eat any more cookies."
> "But we can open the box," said Toad.
> "That is true," said Frog. (p. 361 TM)

The important point here is that Toad's comment means that putting the cookies in a box will not necessarily prevent the two from continuing to eat the cookies. But only his explicit comment is probed by SRU Questions: "What did Toad say about putting the cookies in the box?" (p. 361 TM). To develop a story map, the connotation should have been questioned as well as the explicit statement.

Having explored problematic aspects of question content, we turn to problems created by the sequence of questions. For our example, we again draw on the Houghton Mifflin "Cookies" story. In the SRU to be considered here, Frog ties a string around the box that holds the cookies and Toad objects that the string can be cut; Frog then places the box on a high shelf, but Toad insists that they can use a ladder to retrieve the box, then cut the string, open the box, and eat the cookies. The questions and text for this SRU are provided in Figure 3. The numbers beside italicized segments of text refer to questions that can be answered by those text segments. The salient points for story map development are questioned, but, as can be seen from Figure 3, the order of the questions does not correspond with the order of the text. This is typical of Houghton Mifflin since the first few questions in each SRU group generally attempt to elicit important information from near the end of the unit.

In this particular case, we believe that the sequence of the questions is inappropriate because an understanding of this SRU revolves around a progression of events, each contingent upon the succeeding event. By beginning with the information about putting the cookies on the shelf and then retracing to the action of tying string around the box, the questions may inhibit the logical ordering of story events required for the development of a story map.

In summary, the failure to promote the development of a story map in the primary grades may arise from the content or the sequence of SRU questions. Problems of question content, common in both programs, occur when important story concepts are not questioned. Ginn's question content is most often problematic because information beyond text ideas is elicited in the absence of story map development; Houghton Mifflin's question content tends to follow the text so closely that important implicit information is often neglected. The sequence of questions can be seen as problematic when it does not resemble the sequence of events in the text. This problem is generally confined to the Houghton Mifflin program and seems to be a result of their questioning format. Each Houghton Mifflin SRU Question set begins with questions that elicit information from near the end of the SRU. Later questions then retrace to earlier parts of the text. We believe that questions that fail to establish a map of the story, whether deficient in either content or sequence, are not functioning as effective aids to story comprehension.

SRU Questions

1. Where did Frog put the box?

2. Why did Toad think that the idea wouldn't work?

3. Who will find and read aloud the sentence . . . that tells what Frog put around the box?

4. Who will find and read aloud the sentence . . . that tells why Toad didn't think his plan would work?

5. Find the sentence . . . that tells what Frog did after Toad said they could cut the string and open the box. . . . Who will read it aloud for us?

6. Who will find and read aloud the sentence . . . that tells what Frog did after he got the ladder?

7. Who will find and read for us the sentence . . . that tells why Toad felt Frog's plan wouldn't work?

8. Do you think Frog will have a new plan? Let's find out. Turn to page . . .

Relationship to
SRU Questions

Story Text

3 *"Frog tied some string around the box."*
"There," he said.
"Now we will not eat any more cookies."

4 *"But we can cut the string and open the box," said Toad.*
"That is true," said Frog.

5 *Frog got a ladder.*
1,6 *He put the box up on a high shelf.*

"There," said Frog.
"Now we will not eat any more cookies."

2,7 *"But we can climb the ladder and take the box down from the shelf and cut the string and open the box," said Toad.*

"That is true," said Frog.

(Houghton Mifflin, Level E [1.2], p. 362 TM)

Figure 3. Relationship between text sequence and question sequence for one SRU in the "Cookies" Story.

We now move to the second set of questions, the Story Questions. Story Questions are provided at the end of a selection and are related to the entire selection. We begin by noting Story Question characteristics of each program and presenting the developers' descriptions of how these questions should function. We then discuss our notions about how Story Questions could function and whether the questions in the two programs fulfill these functions.

Characteristics and functions of Story Questions in the primary grades. Our early work on questions found that, in contrast to SRU Questions, the Story Questions in both programs are less concerned with tapping information that is explicitly contained in the text. Story Questions tapping explicit information account for slightly less than half of Houghton Mifflin's total and for about one-third of Ginn's. Also in contrast to SRU Questions, the Story Question sets of both programs contain many more questions that draw on general knowledge rather than text ideas. Another characteristic of Story Questions represents the continuation of a trend found in SRU Questions: Houghton Mifflin provides much more extensive questioning than Ginn. A finding of our early work was that Houghton Mifflin presents an average of four and a half times as many Story Questions as does Ginn.

Houghton Mifflin follows a consistent pattern for its Story Questions throughout the grade levels, presenting them in three separate categories, "Literal Comprehension," "Interpretive Thinking," and "Evaluative and Creative Thinking." The developers discuss the functions of the questions in terms of this format, citing the division into three categories as an attempt to "elicit different levels of intellectual responses and enable [the teacher] to check on the depth of understanding of . . . students" (Level H [2.2], p. I-30 TM). Literal Comprehension questions are designed to "test students' ability to recall important details"; Interpretive Thinking questions are designed to "require students to go beyond a literal understanding," and Evaluative/

Creative questions are designed to require students to "make judgments . . . offer opinions and construct values based on their own experiences" or "use their imaginations" (p. I-30 TM).

In grades one through three of the Ginn program, the Story Questions are provided under a section entitled "Discussing Reading Purpose." The developers describe the function of this section as "promoting comprehension through discussion of previously set [story lesson] purpose for reading" (Level 7 [2.2], p. T23 TM). The Ginn Story Question sets for particular stories vary widely. In some cases, the set of Story Questions uses the story merely as a springboard for general discussion, with little reference to the story. In other cases, all questions in the set relate closely to story ideas.

We have suggested that SRU Questions should have the function of establishing a story map, since these are the first questions encountered in the reading lesson. For the purposes of our discussion of Story Qestions, we will assume that a map of the story has been developed. Story Questions, then, can take the role of extending discussion to broader perspectives. Text extension questions might develop a story interpretation, probe the use of literary conventions, or use story ideas as a springboard for more general discussion. This venture into broader perspectives can most effectively enhance comprehension if it draws on basic story understanding, serving to extend the story map. Not all of the functions mentioned for Story Questions can be fulfilled in each selection; the kind of text extension questions appropriate for a selection must depend on the content of the individual story.

We find that, in general, both programs attend to the function of extending text ideas through Story Questions, but in different ways. Ginn provides a brief outline for a post-story discussion in the element called "Discussing Reading Purpose," which virtually always includes text extension ideas such as applying a story situation to the children's own lives, or imagining how a story character would act in circumstances not covered in the story. Sometimes the discussion begins with questions or suggestions to elicit a brief summary of story action, which can serve to reinforce the story map. Such a discussion which promotes a synthesis of story ideas and then moves to questions that extend those ideas seems the most likely to enhance comprehension.

Houghton Mifflin's Story Questions provide for a much more extensive discussion: Rather than a brief synthesis of the story before moving on to extension questions, Houghton Mifflin devotes a category of Literal Comprehension questions and most of its second category, Interpretive Thinking questions, to detailing story events. Often, many of these questions repeat discrete story ideas which were covered in SRU Questions. Houghton Mifflin's third category, Evaluative/Creative questions, is used to extend story ideas.

In summary, we have suggested that Story Questions function to enhance comprehension of the story by extending story ideas to broader perspectives. Though both programs seem to attend to this function in their Story Questions, we find the Ginn format more often on target. Here we have in mind those Story Qeustion sets, appearing with some frequency in Ginn, that elicit a brief synthesis of story ideas and then move to extend these ideas. Houghton Mifflin's story questioning seems more extensive than is appropriate for the functions we have outlined.

We did not examine specific sets of Story Questions in our discussion for several reasons. We stated the primary function of questions to be the development of a story map. Since SRU Questions are the first set of questions encountered after reading in the primary grades, we have viewed the development of the story map as their responsibility. Story Questions, then, can be used to extend text ideas. Since virtually every story offers a variety of possibilities for extending the text, it is difficult to prescribe particular text extension questions for specific selections. Thus, the presentation of examples of primary grades Story Questions did not seem appropriate. However, the next part of this section, on intermediate grades questioning, will discuss Story Questions more fully. Many of our notions about the features of Story Questions in general will receive attention there.

Intermediate Grades Questions

In both programs, after the third grade the SRU divisions are discontinued and only one set of questions is available: Story Questions, which relate to an entire selection.

Characteristics and functions of the intermediate grades questions. Houghton Mifflin's intermediate grades Story Questions are identical in pattern to their primary grades Story Questions. That is, extensive lists of questions separated under the three labels "Literal Comprehension," "Interpretive Thinking," and "Evaluative and Creative Thinking" are provided for each selection. According to the developers, the purpose for all these questions is "to enhance students' understanding and enjoyment of the selection" (Level L [5], p. I-24 TM).

While the form of Story Questions in Houghton Mifflin remains the same across the six grades, the Ginn intermediate grades questions take a different form from their primary grades Story Questions. As noted earlier, Ginn's primary grades Story Questions are found under an element in the directed reading lesson labeled "Discussing Reading Purpose" and are, according to the developers, designed to check upon the fulfillment of the "purpose" for reading. In the intermediate grades, Story Questions are still found under "Discussing Reading Purpose," and three additional sets of questions are also provided. Two of the additional sets of questions are printed in the students' readers at the end of each selection under the labels "What Do You Think?" and "Taking a Closer Look." The answers to these two sets of questions are then found in the teacher's manual. And next to the answers to most of the questions are some "related questions." The manual states that the answers and related questions "are provided to guide discussion"

(Level 13 [6], p. T21 TM). As for the two sets of questions in the students' text, no rationale is given for the categories "What Do You Think?" and "Taking a Closer Look." We were unable to differentiate between them with questions from both groups sometimes eliciting information from the text and sometimes extending the discussion beyond text ideas.

In the intermediate grades, since SRU divisions and SRU Questions have been discontinued, we believe that Story Questions must serve both to promote the development of a story map and to extend discussion to broader perspectives. Here, as in earlier grades, we view the development of a story map as primary in promoting comprehension of a text; its development is necessary before children can be expected to extend story ideas. In the remainder of this section, we will examine examples from Houghton Mifflin and Ginn to see whether the programs are effective in developing story maps through their intermediate grades questioning strategies.

Our notions on questioning have revolved around the idea that questions should establish a unified conception of a story or story map, rather than elicit haphazard bits of story information, or pursue ideas that are peripheral to the text. To evaluate the questions in selected examples from the two programs, we must have such a unified story concept from which to work. We have therefore derived story maps to use in our examination of intermediate Story Questions. The maps were derived intuitively to represent the central concepts of a story and the organization of those concepts that is needed for comprehension. We are here implying that if a child knows the ideas contained in our story maps in the order in which we present them, s/he understands the story. The maps are not based on any formal system of story structure. Such a formalism is not required for our purposes, as we are not striving to create a methodology for research; we are attempting rather to bring rational order to questioning strategies. We believe our intuitive derivation of a story map to be a sound method of establishing a story representation. Our belief is reinforced in that summaries of stories, similar in precision of formulation to our story maps, have been regarded as valid representations of stories (Kintsch & Kozminsky, 1977).

Problematic aspects of intermediate grades story questioning strategies. We now move to the examples of intermediate Story Questions. In our first example, drawn from Houghton Mifflin, we will evaluate questions by comparing our map of the story to a representation of the story that we believe would be established by answering the program's questions. We have derived this latter story representation by elaborating on the answers Houghton Mifflin provides for its questions.

The story for this example is about a young girl who takes on the job of training a pony, Cherub, to earn money to buy a saddle ("The Cherub and My Sainted Grandmother," Level L [5]). Figure 4 is our map of the story. The first item, labeled "a," represents the starting premise of the story. Items 1 through 7 then follow the progression of events and of ideas in the story.

Figure 5 is the representation of the "Cherub" story derived from the answers Houghton Mifflin provides for its Story Questions. Items 11 and 12, however, are based on the *questions* in the Evaluative/Creative category, since no answers are provided for this category of questions. In the left column of Figure 5, the numerals correspond to items from our map, indicating how each item in Figure 5 relates to the items in Figure 4. A plain numeral indicates a direct correspondence with an item from our map, while the word "partial" before a numeral indicates an indirect or incomplete correspondence to our item. The word "none" before an item indicates that the item has no correspondence to our map and therefore, we believe, is irrelevant to a coherent representation of the story.

a. Maggie took on the job of training a neighbor's pony to earn money to buy a saddle.

1. Maggie felt horses could be trained by winning their trust.
2. This differed from the prevailing view that one had to show a horse who's boss in order to train it.
3. Maggie's grandmother concurred about using trust and love, also telling Maggie the importance of allowing someone his/her dignity.
4. In training Cherub, Maggie realized the importance of dignity, even to an animal, and she therefore decided not to use the "running w" trip rope to put Cherub in a helpless position.
5. Working her own way, Maggie was able to train the pony.
6. Maggie found it hard to give up the pony because she grew fond of him.
7. Maggie's concern for the pony contrasted with that of the little girl who owned him. The girl was more concerned with the accoutrements of riding than with the pony's feelings, as evidenced by her insistence on using a whip. Maggie, on the other hand, gave up the money she worked for to buy Cherub from her neighbors.

Figure 4. A map for the "Cherub" story derived by LRDC researchers.

Relation to items on our map	
a	a. Maggie took on the job of breaking a pony, Cherub, to earn money to buy a saddle.
1/partial 2	1. Maggie had been successful in training horses, believing the training should be done through patience, not force.
none	2. Cherub bit Maggie the first time they met.
partial 3	3. Maggie's grandmother told Maggie to use love in training the pony.
none	4. Grandmother suggested Cherub wouldn't take a saddle because he was too fat.
partial 4	5. Cherub bucked Maggie when she tried to ride him, so she decided to use the "running w" trip rope to bring him to his knees if he tried bucking again.
partial 7	6. Mr. Hagin's daughter, the girl who owned Cherub, was bucked from Cherub when the pony saw she was carring a whip.
none	7. Maggie's father believed that his mother did not have "a bad bone in her body," that is, she was a good, honest person.
none	8. Maggie's great-uncle James had thought it unfitting for Maggie's grandmother to live alone in an isolated cabin.
partial 5/6	9. When Cherub was trained and ready to be ridden by Mr. Hagin's daughter, Maggie hesitated to return him—she wasn't ready to give him up.
partial 3	10. Maggie and her Grandmother were alike in many ways; both were independent, had a sense of humor, and an understanding of animal and human behavior.
none	11. Some people believe there are animals and people who are "just plain mean and bad clear through."
1/2/5	12. Maggie was wiser than her father and Mr. Hagin in her gentle handling of Cherub—this, rather than the forceful techniques they suggested, made Maggie succeed in training the pony.

Figure 5. A representation for the "Cherub" story derived from answers to Story Questions with the relationship to LRDC-derived map specified.

Again, the notions of content and sequence are helpful in sorting out the problematic aspects of the Houghton Mifflin representation. There are two problematic aspects of content here. The most obvious problem of content, as can be seen in the left column of Figure 5, is that much extraneous content is included in story questioning. Several extraneous items are listed below with comments as to why they do not play an important role in a story representation:

2. Cherub bit Maggie the first time they met.
4. Grandmother suggested Cherub wouldn't take a saddle because he was too fat.

These ideas indicate some of the difficulties Maggie encountered in training Cherub, but are merely discrete details of that struggle and do not constitute a major story concept.

8. Maggie's great-uncle James had thought it unfitting for Maggie's grandmother to live alone in an isolated cabin.

This is a detail from a tale that grandmother has related to Maggie, and it has no bearing on the development of the story.

The other content problem involves the items from our map that are only partially represented in the story representation of Figure 5. Of particular importance in this regard is the failure of the Houghton Mifflin sequence to make explicit two highly critical concepts of the story, one which represents the story climax and the other, its conclusion. The climax of the story is represented by item 4 on our map (Figure 4):

> In training Cherub, Maggie realized the importance of dignity, even to an animal, and she therefore decided not to use the "running w" trip rope to put Cherub in a helpless position.

Houghton Mifflin elicits only part of this concept, the explicit detail that Maggie initially decided to use the "running w" if Cherub tried bucking again (item 5 on Figure 5). Omitted is the critical information that Maggie did not carry through with the action, and her implicit reason for holding back--her respect and concern for Cherub.

The story's conclusion is represented by item 7 on our map, Figure 4, which contrasts Maggie's concern for Cherub with that of the little girl who owned him. Again, only one peripheral detail from this concept appears in the Houghton Mifflin representation, that Mr. Hagin's daughter was bucked from Cherub. The omitted circumstances surrounding this story situation--that the girl insisted on carrying a whip after being warned about how it might affect Cherub--are needed if children are to understand the importance of this event to the story. Maggie's feelings for Cherub, motivating her to buy the pony, are also important to a map of the story. This point is also omitted in Houghton Mifflin's handling of the story conclusion.

Finally, we turn to problems in the sequence of the items in the Houghton Mifflin story representation. We have speculated that concepts from a story should be elicited in an order that matches the progression of the story to facilitate construction of a story map.

The sequence of the Houghton Mifflin questions, as represented by the arrangement of the items in Figure 5, does not follow the progression of the story and does not group related explicit and implicit concepts together to allow a synthesis of ideas. In terms of the progression of the story, the following items are out of order: (6) "Mr. Hagin's daughter was bucked from Cherub. . . ." This concept relates to the conclusion of the story, yet occurs halfway through the sequence. (10) "Maggie and her grandmother were alike in many ways; . . ." The similarities between the two characters are revealed early in the story and are germaine to early story ideas rather than to the concluding events. The reason for this ordering is Houghton Mifflin's questioning format which presents three separate categories of questions. Each category is roughly chronological in terms of the story.

Item 6 represents the last question in the first (Literal) category, and thus ends one chronological progression through the story. A new progression begins for the second (Interpretive) category. Item 10 is from the Interpretive category and, as such, is part of the second progression through the story.

Concepts that are related, but not grouped together, concern the views of Maggie and her grandmother and their similarities. Item 1 concerns Maggie's views on training horses, item 3 concerns the grandmother's ideas on training horses, and item 10 discusses similarities between the two characters. The scattered placement of these concepts works against the possibility of drawing on the concepts from items 1 and 3 to make the inferences for item 10. Again, the questioning format is at the root of this problem in sequencing. Items 1 and 3 are in the Literal category, and so are separated from item 10 which is in the Interpretive category.

From this examination of the Houghton Mifflin story representation derived from the program's questions for the "Cherub" story, it seems to us that the questions provided are not the most effective for promoting the development of a story map. It seems as though the developers have generated questions by asking "What literal ideas can we ask about here? . . . What interpretive ideas can we ask about here? . . ." rather than saying "What is this story all about? . . . "What information is crucial to story development?"

In our next example, drawn from the Ginn program, we will again present a map of the story that we have derived. In this example, however, we cannot show a Ginn story representation that would be constructed from a discussion of their Story Questions. Ginn provides such a variety of possible responses for its questions that it is impossible to predict just what form a story representation would take. Instead, we will present Ginn's Story Questions themselves.

The story for this example concerns a lonely lighthouse keeper and his assistant who witness the emergence of a prehistoric sea creature from the ocean depths ("The Fog Horn," Level 13 [6]). Figure 6 presents our map for "The Fog Horn." As in our previous example, item "a" represents the starting premise for the story. Items 1 and 7 represent explicit story events and inferences critical for understanding the story. Figure 7 consists of the four sets of Ginn Story Questions for "The Fog Horn": "Discussing Reading Purpose," "What Do You Think?", "Taking a Closer Look," and the related questions pertaining to the latter two sets (marked by r). In the left-hand column of Figure 7, we indicate the relationship of each question to items from our story map.

As shown in Figure 7, most of the Ginn Story Questions are seen as unrelated to our map. The reason for this is not that the questions, in most cases, focus on irrelevant story content, but that they initiate discussion at a point well beyond explicit or implicit story concepts, i.e., well beyond a story map. The questions are broadly aimed at text extension notions such as theme, mood, and style with no attempt to first establish a map of the story. Of the questions that do relate in some way to items on our story map, most of them relate indirectly. Again, the reason is that the questions pursue the extension of text ideas, without first establishing the ideas. For example, Ginn's second question in the "What Do You Think?" category asks what Johnny might have learned from his experience. This question is only indirectly related to item 7 from our map, Figure 6, because it does not elicit the direct evidence children would need to substantiate such an interpretive response; the experience itself and Johnny's reaction to it are not established.

The fundamental problem in the Ginn Story Questions is that they are geared toward extending text ideas without considering that children need a coherent representation of text ideas before they can be expected

a. McDunn, the lighthouse keeper, has been living in isolation for many years.

  1. He has developed theories about the Fog Horn which center on the images of loneliness that its sound evokes.
  2. McDunn's isolation is broken by the arrival of an assistant, Johnny.
  3. As McDunn confides to Johnny that a prehistoric creature has visited the lighthouse on the same November night for three consecutive years, the creature again appears. He is apparently summoned by the Voice of the Fog Horn, much like his own.
  4. The creature resembles the lighthouse because the beam of the lighthouse is like the eye of the creature, and the tower resembles the creature's stalk-like neck.
  5. McDunn ponders the incredible isolation in which the creature exists in the sea depths, an isolaiton that parallels McDunn's own.
  6. The creature, getting no response from the lighthouse, destroys the lighthouse with the voice like its own, and returns to life in isolation in the depths of the sea.
  7. Perhaps responding to the loneliness and isolation he has witnessed, Johnny leaves the job and adopts a cozy lifestyle in a small town. McDunn again is alone as the lighthouse keeper.

Figure 6. A map for the "Fog Horn" story derived by LRDC researchers.

Relation to items on our map	
	Discussing Reading Purpose
none	The teacher asks "why the ocean is emphasized in the opening illustration."
	The manual notes that "discussion could also touch on the significance of the ocean — its mystery, its awesome power, and its unexplored depths, as well as the fear and wonder that it causes people to feel."
	What Do You Think?
none	1. How would you state the theme of this story?
partial 7	2. What might Johnny have learned about life as a result of this experience? Why did McDunn understand the monster so well?
none	(r) Why do you suppose that McDunn became a lighthouse keeper? Would you ever volunteer for such a job?
none	3. How might a scientist explain the mysterious happenings in this story?
none	(r) Have you ever had a hard time distinguishing between what was real and what was imaginary? If so explain.
	Taking a Closer Look
none	1. Describe the setting and mood of this story. How does the author use the senses of smell, touch, sound, and sight to create the mood?
none	(r) Which phrases caught your imagination most?
partial 4	2. In what ways were the lighthouse tower and the monster alike? What life-like qualities did the author give to the tower?
none	(r) How were the tower and the monster different?
3/partial 6	3. Why do you think the monster returned to the tower for four consecutive years? Why didn't he return again?
partial 4	(r) Why did the monster attack the tower?
partial 7	4. How did the new lighthouse differ from the tower that was destroyed? What does this tell you about McDunn? How did Johnny feel when he returned to visit a year later?
none	(r) Do you think Johnny continued his visits to the lighthouse? Why or why not?
none	5. "Fog Horn" is capitalized throughout the story. Several other words not usually written this way are capitalized also. Find some of these and tell why you think the author capitalized them.
none	(r) When you first read the phrase "Lonesome Bay" close to the end of the story, did you think of it as a place on a map or a description of the Voice? Why do you suppose the author put off naming the setting of the story for so long?
none	6. How did you feel toward the monster at the end of the story? Why?
none	(r) What change in McDunn's life might be indicated by the monster's failure to return? If you were to write a sequel to this story, how would it differ from what you've read?
	(Ginn, Level 13 [6], pp. 120-122 TM)

Figure 7. Story questions for the "Fog Horn"story.

to extend them to broader perspectives. Even as adults, we would not want to be faced with such a broad, interpretive question as "How would you state the theme of this story?" (question 1 under "What Do You Think?") as the first step in discussing a piece of literature. "The Fog Horn" offers rich potential for extending discussion. We believe that very little understanding of this story's richness is likely to occur, however, if children do not first construct a map of the story from which to work.

Another characteristic of Ginn's story questioning material seems to be a further indication that the program developers are not attempting to foster the development of a story map. As mentioned at the beginning of our discussion of Ginn's Story Questions, the program provides a multiplicity of answers for vitually every question. The number and diversity of suggested responses seem to indicate that Ginn aims to encourage a brainstorming session, emphasizing the variety of responses, rather than to encourage responses that can be well substantiated by the story.

In summary of our examination of the two programs' intermediate grades questioning, the main problem of Ginn's questioning strategy seems to be the absence of question content needed for the development of a story map; the questions provided are geared toward interpreting the text. Such questions could be useful, but only if they were preceded by questions aimed at developing a coherent story map. Houghton Mifflin, on the other hand, comes somewhat closer to story map development than Ginn, but we conclude that it is also deficient. Houghton Mifflin questions story elements that are not critical to story understanding, and the program does not sequence its questions in a logical order for coherent story map development.

Summary and Conclusions

Our focus in this section has been upon the use and effectiveness of questions as an aid to the comprehension of a text. In our examination of questions we showed differences in the format and the content of questions between the two programs. Regarding format, the most notable differences were, first, that Houghton Mifflin provides many more questions, both SRU and Story Questions, in the primary levels than does Ginn. Second, for Story Questions, Houghton Mifflin maintains a consistent format throughout its levels, presenting three categories of questions--Literal, Interpretive, and Evaluative/Creative. In contrast, Ginn's format of questions is more varied. In terms of content, it seems that in general Houghton Mifflin puts more emphasis on information explicitly stated in the text, while Ginn puts more emphasis on extending text ideas into general discussion.

We proposed that the primary function of questions be to develop a map of the story, which we defined as a unified conception of a story formed from explicit and implicit story information. Once a map has been established, questions can appropriately extend story ideas to broader perspectives.

Despite the differences within and between levels and programs, questions at all grade levels and in both programs exhibit the same fundamental problem: They are not designed toward a goal of helping children to formulate a story map. The questions exhibit no plan of organization that is aimed to help children synthesize story information and reconstruct the story as a unit.

This fundamental problem is manifested in different ways. In describing these problematic aspects, we used the notions of content (what information is asked for) and sequence (the order of the questions). In the primary grades of both programs, the SRU Questions exhibited problems of content, usually that information needed for a story map was not questioned. Sequence problems were found almost exclusively in Houghton Mifflin. Such problems arosc because of the programs' tendency to begin each SRU Question series by eliciting information from the end of the unit, and then retracing to earlier information.

In the intermediate levels, Story Questions, as the only set of after-reading questions, need to develop a map of the story as a first objective and then extend story ideas to broader perspectives. The first objective of story map development was, again, often not fulfilled. No plan of organization seemed to underlie sets of Story Questions. The examples we presented typified problems in the questioning strategies of both programs.

Our work on questions has been in the way of logical analyses and speculation rather than empirical study. Yet we think it is intuitively compelling that questions are most likely to bring about comprehension of a story if they are logically organized to follow story events, to highlight important ideas, and to establish connections between related concepts.

Our recommendations to program developers are that questions for a story be derived from a unified conception of the story so as to lead children to develop a story map. Once conditions have been arranged for the development of a map, questions should then take advantage of story ideas appropriate for extended discussion, such as literary conventions or story interpretation.

To promote their students' comprehension, teachers might review questions for particular stories in terms of their ability to aid the establishment of a story map. If teachers find questions are lacking in this regard, they can, during story discussion, make adjustments in question content to elicit key information or reorganize the sequence to correspond to that of the story.

Following are some notions about how further investigation of questions might proceed. The next step would be to test our intuitions about the effectiveness of questions that establish a story map. To this end, an empirical study might be devised in which groups of children are exposed to one of two different lesson sequences for a story. One of the lessons would contain the problematic questions provided by the program; the other would contain questions developed around a story map. After children had read the story and answered the questions, broad measures for discovering differences in story comprehension would be employed. Children might be asked for an oral summary of the story. A delayed recall of the story could also be elicited after several days.

Summary and Conclusions

During the past year, we have examined two commercially published reading programs, the 1976 Houghton Mifflin Reading Series and the 1976 Ginn Reading 720 Program, to describe how reading comprehension is taught in two different basal programs. The goal of our work has been to describe the instruction at a finely grained level that would allow evaluation of current practices as a prelude to empirical investigation. From examination of the preparation, reading, and questioning components in randomly selected lessons, we have identified a number of issues that may play a role in comprehension of the text at hand. In examining the issues, we kept in mind a target population of poor-prognosis readers.

To recapitulate the particular issues we identified and discussed in this report, we first found that in the earliest texts students read, communication of the intended message is inhibited because the vocabulary necessary to convey particular information has yet to be developed. Because of vocabulary restrictions, the texts sometimes barely approximate an intended meaning or they entirely omit crucial information. In examining examples from both programs, we found and discussed cases in which information necessary to clarify the earliest texts was not always provided. We concluded that programs should compensate for the limited texts by judicious use of pictures and by appropriate teacher guidance through the texts.

We next turned to a discussion of the pictures that accompany the texts. Here we examined specific aspects of pictures that could help or hinder comprehension, rather than attempting to determine an overall effect of pictures on reading comprehension. Our examination focused on aspects of content, i.e., what is depicted, and style, i.e., the artist's rendition of the content. After reviewing examples from both programs, we suggested that more careful consideration should be given to picture content and style to assure that pictures clarify, rather than compete with, the text.

Continuing with the next issue discussed, we discovered that in the later primary and intermediate grades, both programs include stories in which knowledge far beyond the everyday experiences of poor-prognosis students seems to be required if comprehension is to occur during the reading lesson. We believe that the appropriate time to begin to build this background knowledge would be during the time allocated to preparing for an upcoming selection. Instead, through examination of the preparation activities of the program, we discerned no systematic differential treatment for those texts in which a prior knowledge background was judged to be needed as a framework for interpreting the content of a new selection. We concluded that the omission of such a provision is a possible detriment to students' comprehension of the information-laden stories we examined.

As a specific component of background knowledge, we studied vocabulary instruction to determine the programs' procedures for moving new words into students' vocabulary repertoires. We speculated that words are acquired along an unknown to acquainted to established progression. We considered the use and effectiveness of several instructional strategies in the programs for moving words along our word acquisition progression. The strategies studied were preteaching new words before students read a selection, using story context as a teaching vehicle, and providing after-reading activities for the maintenance of new words. We suggested that both programs rely too heavily on context to support the meaning of new words. Natural story contexts such as those used by the two programs are not always effective in promoting meaning acquisition. We believe that the frequency and variety of encounters with new words should be increased in both programs during direct pre- and post-reading instruction.

The traditional practice in both programs of setting a "purpose" for reading each selection was also examined. After studying examples of the practice in both programs, we proposed that this activity be viewed by program developers as a direction-setting activity, one in which an attempt should be made to activate in the students an appropriate schema for viewing the upcoming selection. If viewed in this light, the form of the activity would have to be revised slightly from its current format in the basal programs.

We also discovered that in certain instances, primary grades stories are divided into smaller reading units on what appears to be illogical bases. To facilitate story comprehension, we suggested that story division be based upon the episodic structure of the story. We also examined the activity in both programs that directly precedes the reading of each silent reading unit (SRU). Adjacent SRU's are separated by a period of questioning about the content just read. We identified several possible functions of the activity preceding the SRU and we suggested that its most helpful function for story comprehension would be to act as a starter device, i.e., to provide transition for the students back into story reading after the period of questioning.

Finally, we explored examples of after-reading questioning. While studying the programs' current questioning techniques and commenting on their potential weaknesses, we speculated that questioning should first establish a "map" of the story before going on to ask for thematic interpretations or the like. By establishing a "map," we mean that both explicit story events and inferences critical for understanding the plot be systematically drawn out by the teacher in post-reading questioning.

In retrospect, we believe that both the process of conducting the examination of the past year and its resulting product, this report, have accomplished their goals. They have provided us with quantities of useful information about current practices in reading comprehension instruction and they have given us much grounds for thought about specific practices that could likely be improved to better facilitate students' comprehension. Throughout the paper we have implied an equation of the ease of comprehensibility with good reading instructional practice. However, we also discuss the need to challenge students in ways that will add to their pool of knowledge and vocabulary and extend their thinking about text ideas. The notions of easy material and the need for challenge would seem to leave us with conflicting recommendations. We believe this conflict may have a resolution in the development of a two-track system of reading instruction to consist of daily reading assignments of fairly easy material combined with regular presentation of conceptually more difficult materials grouped around the same knowledge domain. The easier selections would provide children with the reading practice necessary to build fluency while the more difficult material would help to build students' knowledge structures. Grouping the more challenging selections around the same knowledge domain would make efficient use of time spent preparing children to read about specific content. Each successive story in the strand would then reinforce children's previous knowledge of the domain and proceed to build on that knowledge base.

Regarding the issues identified in this paper, in some cases we believe we are ready to move on to empirical investigation. In other cases, we would like to think further to refine the dimensions for analysis of the programs. In both of these respects, we look forward with eagerness to the next stages of our work.

Reference Notes

1. Stein, N. L., & Glenn, C. G. The role of structural variation in children's recall of simple stories. Paper presented at the Society for Research in Child Development, New Orleans, 1977.

2. Block, K. K., & McCaslin, E. S. Efficiency in teaching vocabulary concepts: Attainable or not? Unpublished manuscript, University of Pittsburgh, Learning Research and Development Center, 1978.

References

Adams, M. J. *Failures to comprehend and levels of processing in reading* (Tech. Rep. No. 37). Urbana, Ill.: University of Illinois at Urbana-Champaign, Center for the Study of Reading, April 1977.

Adams, M. J., Anderson, R. C., & Durkin, D. *Beginning reading: Theory and practice* (Rdg. Educ. Rep. No. 3). Champaign, Ill.: University of Illinois at Urbana-Champaign, November 1977.

Aliotti, N. C. Ability to 'read a picture' in disadvantaged first grade children. *The Reading Teacher*, 1970, *24*, 3-6; 57.

Anderson, R. C. *Schema-directed processes in language comprehension* (Tech. Rep. No. 50). Urbana, Ill.: University of Illinois at Urbana-Champaign, Center for the Study of Reading, July 1977.

Anderson, R. C., & Biddle, W. B. On asking people questions about what they are reading. In G. Bower (Ed.), *Psychology of learning and motivation* (Vol. 9). New York: Academic Press, 1975.

Anderson, R. C., & Kulhavy, R. W. Learning concepts from definitions. *American Educational Research Journal*, 1972, *9*, 385-390.

Anderson, R. C., & Pichert, J. W. *Recall of previously unrecallable information following a shift in perspective* (Tech. Rep. No. 41). Urbana, Ill.: University of Illinois at Urbana-Champaign, Center for the Study of Reading, April 1977.

Austin, M. C., & Morrison, C. *The first r: The Harvard report on reading in elementary schools*. New York: Macmillan, 1963.

Barrett, T. C. Goals of the reading program: The basis for evaluation. In T. C. Barrett (Ed.), *The evaluation of children's reading achievement*. Newark, Del.: International Reading Association, 1967.

Bartolome, P. I. A comparison of questions and objectives listed in basal reader guidebooks with those observed in the reading lesson (Doctoral dissertation, Ohio State University, 1968). *Dissertation Abstracts International*, 1968, *30*, 138A. (University Microfilms No. 69-11, 606)

Beck, I. L. *Instructional ingredients for the development of beginning reading competence*. St. Louis: CEMREL, in press.

Beck, I. L., & Block, K. K. An analysis of two beginning reading programs: Some facts and some opinions. In L. B. Resnick & P. Weaver (Eds.), Theory and practice in early reading. Hillsdale, N. J.: Lawrence Erlbaum Associates, 1979.

Beck, I. L., & McCaslin, E. S. An analysis of dimensions that affect the development of code-breaking ability in eight beginning reading programs. Pittsburgh: University of Pittsburgh, Learning Research and Development Center, 1978. (LRDC Publication 1978/6)

Brown, A. L., Smiley, S. S., Day, J. D., Townsend, M. A. R., & Lawton, S. C. Intrusion of a thematic idea in children's comprehension of stories (Tech. Rep. No. 18). Urbana, Ill.: University of Illinois at Urbana-Champaign, Center for the Study of Reading, February 1977.

Carroll, J. B. Developmental parameters of reading comprehension. In J. T. Guthrie (Ed.), Cognition, curriculum, and comprehension. Newark, Del.: International Reading Association, 1977.

Chiesi, H. L., Spilich, G. J., & Voss, J. F. Acquisition of domain-related information in relation to high and low domain knowledge. Journal of Verbal Learning and Verbal Behavior, 1979, 18, 257-273.

Clymer, T. (senior author). Reading 720. Lexington, Mass.: Ginn, 1976.

Cooke, D. A. An analysis of reading comprehension questions in basal reading series according to the Barrett taxonomy (Doctoral dissertation, Cornell University, 1970). Dissertation Abstracts International, 1970, 31, 6467A. (University Microfilms, 71-12, 124)

Corder, R. The information base for reading. A critical review of the information base for current assumptions regarding the status of instruction and achievement in reading in the United States. Berkeley, Cal.: Educational Testing Service, 1971. (ERIC Document Reproduction Service No. ED 054 922)

Cronbach, L. J. An analysis of techniques for diagnostic testing. Journal of Educational Research, 1942, 36, 206-217.

Davis, R. Fundamental factors of comprehension in reading. Psychometrika, 1944, 185-197.

Diederich, P. B. Educating those who teach reading (TM Report 23). Princeton, N. J.: Educational Testing Service, 1973.

Draper, A. G., & Moeller, G. H. We think with words (therefore, to improve thinking, teach vocabulary). Phi Delta Kappan, 1971, 52, 482-484. (ERIC Document Reproduction Service No. ED 036 207)

Durr, W. K. (senior author). The Houghton Mifflin Reading Series. Houghton Mifflin, 1976.

Frase, L. T. Purpose in reading. In J. T. Guthrie (Ed.), Cognition, curriculum, and comprehension. Newark, Del.: International Reading Association, 1977.

Gray, W. S., & Holmes, E. The development of meaning vocabularies in reading: An experimental study. University of Chicago, 1938. (Harris, T. L. Reading. In R. L. Ebel (Ed.), Encyclopedia of Educational Research. London: Macmillan, 1969, pp. 1069-1104.)

Guszak, F. J. Teacher questioning in reading. The Reading Teacher, 1967, 21, 227-234.

Guthrie, J. T. Reading comprehension processes and instruction. In J. T. Guthrie (Ed.), Cognition, curriculum, and comprehension. Newark, Del.: International Reading Association, 1977.

Harris, A. J., & Sipay, E. R. How to increase reading ability (6th ed.). New York: David McKay, 1975.

Herber, H. Teaching reading in the content areas. Englewood Cliffs, N. J.: Prentice-Hall, 1970.

Humes, A. Requirement for vocabulary development instruction (Tech. Rep. No. 3-76-08). Los Alamitos, Cal.: Southwest Regional Laboratory, December 1976.

Jenkins, J. R., & Pany, D. Teaching reading comprehension in the middle grades (Rdg. Educ. Rep. No. 4). Champaign, Ill.: University of Illinois at Urbana-Champaign, Center for the Study of Reading, January 1978.

Keir, C. The use of pictures as an aid to reading. Reading, 1970, 4(1), 6-11.

Kintsch, W., & Kozminsky, E. Summarizing stories after reading and listening. Journal of Educational Psychology, 1977, 69(5), 491-499.

Kintsch, W., & Vipond, D. Reading comprehension and readability in educational practice and psychological theory. In L. G. Nilsson (Ed.), Memory: Processes and problems. Hillsdale, N. J.: Lawrence Erlbaum Associates, 1978.

Klare, G. R. The measurement of readability. Ames: Iowa State University Press, 1963.

Lesgold, A. M., & Perfetti, C. A. Interactive processes in reading comprehension. Discourse Processes, 1978, 1, 323-336.

Markle, S. M. They teach concepts, don't they? Educational Researcher, 1975, 4, 3-9.

Otto, W., Rudolph, M., Smith, R., & Wilson, R. The Merrill Linguistic Reading Program (2nd ed.). Columbus, Oh.: Charles E. Merrill, 1975.

Peeck, J. Retention of pictorial and verbal content of a text with illustrations. Journal of Educational Psychology, 1974, 66, 880-888.

Popp, H. M. Current practices in the teaching of beginning reading. In J. B. Carroll & J. S. Chall (Eds.), Toward a literate society. New York: McGraw-Hill, 1975.

Poulsen, D., Kintsch, E., Kintsch, W., & Premack, D. Children's comprehension and memory for stories. Journal of Experimental Child Psychology, in press.

Rosecky, M. H. An analysis of questions and activities accompanying narrative in selected basal guidebooks and teachers' use of guidebooks (Doctoral dissertation, University of Pennsylvania, 1976). Dissertation Abstracts International, 1976, 37, 6936A. (University Microfilms No. 77-10, 731)

Ruddell, R., & Bacon, H. The nature of reading: Language and meaning. In R. Hodges & E. H. Rudorf (Eds.), Language and learning to read: What teachers should know about language. Boston: Houghton Mifflin, 1972.

Samuels, S. J. Attentional process in reading: The effect of pictures on the acquisition of reading responses. Journal of Educational Psychology, 1967, 58, 337-342.

Sanders, N. Classroom questions: What kind? New York: Harper & Row, 1966.

Schallert, D. L., Kleiman, G. M., & Rubin, A. D. Analyses of differerences between written and oral language (Tech. Rep. No. 29). Urbana, Ill.: University of Illinois at Urbana-Champaign, Center for the Study of Reading, April 1977.

Spache, G. D., & Spache, E. B. *Reading in the elementary school* (4th ed.). Boston: Allyn and Bacon, 1977.

Spilich, G. J., Vesonder, G. T., Chiesi, H. L., & Voss, J. F. Text processing of domain-related information for individuals with high and low domain knowledge. *Journal of Verbal Learning and Verbal Behavior*, 1979, *18*, 275-290.

Stein, N. L., & Glenn, C. G. An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *Discourse processes: Advances in research and theory* (Vol. 2). Norwood, N. J.: Ablex, in press.

Stein, N. L., & Nezworski, T. The effects of organization and instructional set on story memory. *Discourse Processes*, 1978, *1*(2), 177-193.

Sticht, T., Beck, L., Hauke, R., Kleiman, G., & James, J. *Auding and reading: A developmental model*. Alexandria, Va.: Human Resources Research Organization, 1974.

Thompson, J. E. Instructional intervention in the development of qualitative vocabulary: A further study (Doctoral dissertation, State University of New York at Buffalo, 1973). *Dissertation Abstracts International*, 1973, *34*, 1504A. (University Microfilms No. 73-23, 857)

Thorndike, E. L. Reading as reasoning. *Journal of Educational Psychology*, 1917, *8*, 323-326.

Trabasso, T., & Nicholas, D. W. Memory and inferences in the comprehension of narratives. In F. Wilkening, J. Becker, & T. Trabasso (Eds.), *Information integration by children*. Hillsdale, N. J.: Lawrence Erlbaum Associates, in press.

Warren, W. H., Nicholas, D. W., & Trabasso, T. Event chains and inferences in understanding narratives. In R. O. Freedle (Ed.), *Discourse processes: Advances in research and theory* (Vol. 2). Norwood, N. J.: Ablex, in press.

Weinrich, U. On the semantic structure of language. In J. H. Greenberg (Ed.), *Universals of language*. Cambridge, Mass.: MIT Press, 1963.